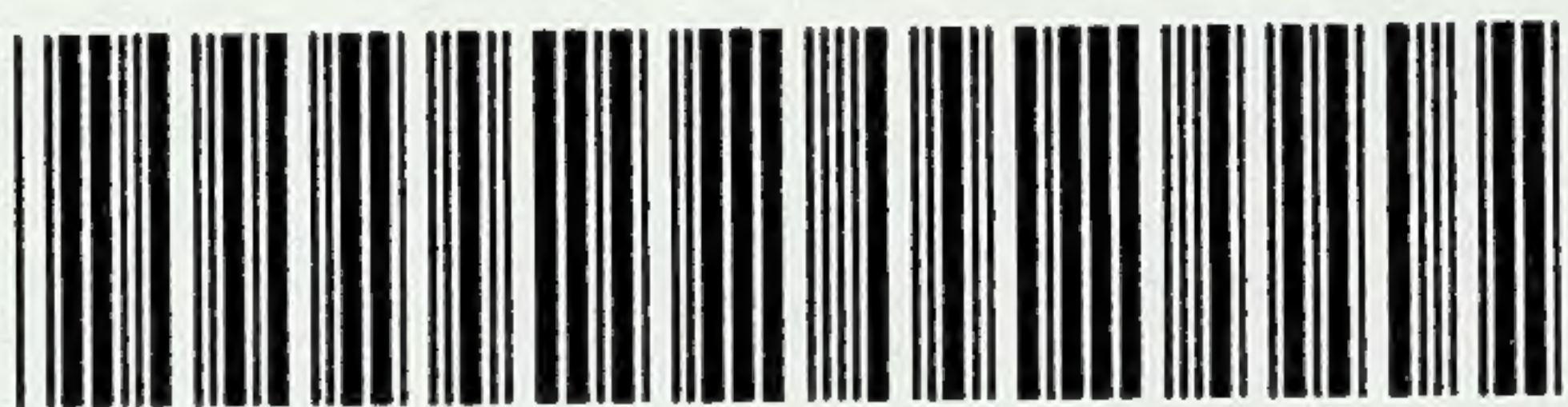


# W O M A N

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# WOMAN

AN HISTORICAL GYNÆCOLOGICAL  
AND ANTHROPOLOGICAL COMPENDIUM





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# W O M A N

AN HISTORICAL GYNÆCOLOGICAL  
AND ANTHROPOLOGICAL COMPENDIUM

BY HERMANN HEINRICH PLOSS  
MAX BARTELS AND PAUL BARTELS

EDITED BY ERIC JOHN DINGWALL

WITH MORE THAN 1,000 ILLUSTRATIONS IN  
BLACK-AND-WHITE AND SEVEN COLOUR PLATES

VOLUME ONE



LONDON  
WILLIAM HEINEMANN (MEDICAL BOOKS) LTD.

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## PREFACE

THE present work is the first English translation of a compilation which has enjoyed a very considerable reputation in Great Britain, on the Continent, and in the United States for fifty years. Under the authorship of Dr. Hermann Heinrich Ploss (1819–1885) the first edition appeared with a title page dated 1885. The second edition, which was published in 1887, after the author's death, was edited by Dr. Maximilian Karl August Bartels (1843–1904), who supplemented the original text with additional observations, above all, in those departments in which his own special interests lay. As the value of the work became more fully recognised, and its utility became more and more apparent, further editions appeared, until, in 1908, the ninth edition was published under the general supervision of Dr. Paul Bartels. In 1914 the latter died; and it was not until 1927 that the eleventh, much enlarged and revised version was issued, under the editorship of Ferdinand Emil, Freiherr von Reitzenstein, who not only supplemented the text with a considerable amount of material from his own pen, but also added a great number of additional photographs drawn from a variety of sources and many taken from nature in order more fully to illustrate the text.

It will be seen from the foregoing remarks that the work is in no sense of the word the product of a single school expounding some particular thesis, but that it consists essentially of summarised notes drawn from both ancient and modern authorities, and is thus rather of historical and cultural interest than of practical utility. Unsurpassed in its own department, the book was planned on an ambitious scale. Not only was it intended to summarise much of the material easily obtainable elsewhere, but also to deal fully with those aspects of woman's life which are little known even to gynæcologists. It is perhaps these sections which give the work its peculiar merit. In no other compilation can such a mass of material be found, and the photographs accompanying the text have been chosen to illustrate the points discussed in a manner rarely hitherto attempted. The living model is made to demonstrate the descriptive matter, and thus illustrations, which at first sight appear of but slight interest, are seen to contain features of singular anthropological and gynæcological value.

Since the day when Dr. Ploss conceived the idea of the original work our knowledge has grown to such an extent that it has become increasingly difficult to adapt the scope of the book to the changing circumstances. In the last German edition Freiherr von Reitzenstein altered to a certain extent the character of the text. The sections relating to the biological and physical aspects of anthropology were increased in length and some attention was paid to subjects which had hardly appeared above the horizon in the days when Ploss and Bartels were arranging the material that they had collected.

In the present English edition I have endeavoured, although at times, I fear, very imperfectly, to steer a middle course. On the one hand I have attempted to preserve in its essentials the character of the book as originally planned by Dr. Ploss. Readers of the earlier editions will recognise much of his material, and will be



interested to see how the growth of scientific research has led to the abandonment and modification of some of his conclusions.

In certain cases I have ventured here and there, even at the risk of being accused of tampering with the text, to change or to modify some of the statements and theories of my predecessors where more recent knowledge has proved them wholly invalid, or where reprinting them would have added nothing to the cultural or historical value of the work. Thus it will be seen that both the anthropologist and the medical gynæcologist must exercise a certain discrimination. The book is not intended to be a modern feminine encyclopædia. It serves rather as a compendium in which Woman is the centre, and around her are grouped examples of her manifold activities arranged, as far as possible, to illustrate their variety and the means which are used in their investigation.

In order to illustrate certain modern tendencies I have added passages in various sections, which are indicated in the text by being enclosed in square brackets, and which I thought might be of interest to certain readers from a comparative point of view. Thus in this edition there will be found a rather fuller space devoted to certain aspects of female anatomy designed to assist anthropologists in their accounts of mutilation ceremonies and somatic characteristics : some recent figures for crime drawn from British statistics, which supplement those which were intended for continental readers ; and an additional note on the problem of prostitution with special reference to the abolitionist controversy. Similarly, I have largely re-written the section dealing with the glands of internal secretion, and, with the invaluable assistance of Dr. Joseph Needham and Professor Harold Cummins, have both abridged and revised much of the embryological material. Moreover, I have not hesitated to enrich the original sources with some hundreds of additional references drawn from my own collections, which in many respects have a close resemblance to those from which Dr. Heinrich Ploss and Dr. Max Bartels drew their material.

In the earlier editions the references to many of the statements were imperfect and sometimes erroneous, and, moreover, in a considerable number of cases they were lacking altogether. Although it has not been found possible to verify in every instance those of the references which have been passed on from edition to edition, immense improvements have been made in the list of authorities, and many additional entries inserted.

The result of checking much of the original material to be found in the earlier editions and inserting a mass of new references, including many standard authorities in English, has been to make the list of authorities a useful guide to the literature relating to Woman. Although it has no pretence to being a complete bibliography of the subject, it will be found to include much of the easily available matter, and in the more obscure regions dealt with in the work it is hoped that the references will be found to be as complete as can be reasonably expected in a work which can truly be said to be a storehouse of infinite variety.

In conclusion, it is my pleasant duty to tender my thanks to all those who have assisted me, both in offering technical advice and in examining sections where I am not in any way competent to express an opinion. Among these I must especially mention my friends Dr. N. J. T. M. Needham, Professor H. Cummins and Dr. Frank Goldby, who have given me much assistance in the embryological and anatomical sections ; Dr. E. J. Thomas, who has been a constant source of inspiration and knowledge in Oriental matters : Miss E. M. Butler and Mr. B. W. Downs, to whose erudition I owe the solution of certain linguistic difficulties ; Mr. H. Wynne-



Finch for his very careful and laborious reading and correcting of the page proofs; and Mr. C. A. Bang, O.B.E., without whose constant help the English edition could not have been attempted.

Although I have received much generous assistance from experts in the various sections, the responsibility for the presentation of the work as a whole is solely my own. I would therefore ask the indulgence of my readers. Errors of fact remain, and are, indeed, intended to remain, since much of the material is inserted to illustrate the ideas and methods of the past. Indeed, some of the more modern sections may well be out of date on the day of publication, so rapidly is our knowledge extending. This compendium on Woman must stand as it is, and, although we may wish for changes in one or two directions, there are many who will assuredly find interest within its pages. Miscellaneous collection though it be, it is dedicated to one object only, for it is intended to throw some light on the life and varying activities of her of whom Victor Hugo writes—

Enfant ! si j'étais roi, je donnerais l'empire,  
Et mon char, et mon sceptre, et mon peuple à genoux,  
Et ma couronne d'or et mes bains de porphyre,  
Et mes flottes, à qui la mer ne peut suffire,  
Pour un regard de vous !

Si j'étais Dieu, la terre et l'air avec les ondes,  
Les anges, les démons courbés devant ma loi,  
Et le profond chaos aux entrailles fécondes,  
L'éternité, l'espace et les cieux et les mondes,  
Pour un baiser de toi !

E. J. DINGWALL.

14, SELWYN GARDENS,  
CAMBRIDGE.







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# WOMAN

## PART I

### THE ORGANISM OF WOMAN

#### CHAPTER I

#### IN HER ANTHROPOLOGICAL ASPECT

##### 1. THE SEXUAL CHARACTERISTICS

MAN and woman differ from each other in several respects, and these differences are termed Sexual Characteristics. They include the special organs of sex, but are not confined to these organs. John Hunter (1728–1793) was the first to distinguish between primary and secondary sexual characteristics, and Darwin followed and emphasised this distinction, which has proved of great use in scientific investigation and was considered adequate for over a century. But the growth of knowledge proved the need for further categories—a need conclusively shown by the discovery of the rôle of the endocrine secretions. Poll has suggested the following classification of Sexual Characteristics :

I. *Essential* (or Germinal), in which he includes only the gonads or reproductive glands, *i.e.*, testes and ovaries respectively.

II. *Accessory*.

(a) Subsidiary genital.

(1) Internal (ducts, copulatory organs, vascular organs and accessory glands).

(2) External.

(b) Extragenital.

(1) Internal (vocal and psychic peculiarities).

(2) External (differences in general structure).

Hirschfeld <sup>1</sup> makes a further sub-division. He distinguishes :

I. Sexual Organs proper, which he further classifies as Secretory, Ducts, Conserving (or Reservoirs) and Copulatory Organs.

II. Further bodily differences in structure.

III. The Sexual Instinct.

(a) The *Centripetal* trend, *i.e.*, the direction of desire.

(b) The *Central* Impetus, *i.e.*, the force of desire.

(c) The *Centrifugal* expression, *i.e.*, the release of desire.

(d) The regulative mechanism, *i.e.*, the inhibition of desire.

A brief description of the female sexual characteristics is appended, based on the system suggested above.



## (a) The Primary Sexual Characteristics

These may also be described as *glandular* or *gonadal*. They manufacture the essential reproductive cells, whether male (sperms) or female (ova), and are the crucial factors in cases of indeterminate or intermediate type, however atypical the remaining bodily structure. Both testes and ovaries are glands of complicated structure containing tissue of different sorts. Only a part of these gonads is actually reproductive, *i.e.*, devoted to the formation of reproductive cells, or to spermatogenesis or oögenesis respectively, for they also contain tissues of endocrine accessory type. The pair of ovaries lie in the lower portion of the abdominal cavity and are attached to the broad ligaments of the uterus. They are about the size of small plums. They consist of :—

(a) Connective tissue (*stroma ovarii*), which forms both an exterior sheath (*tunica albuginea*), medulla and the *cortex*.

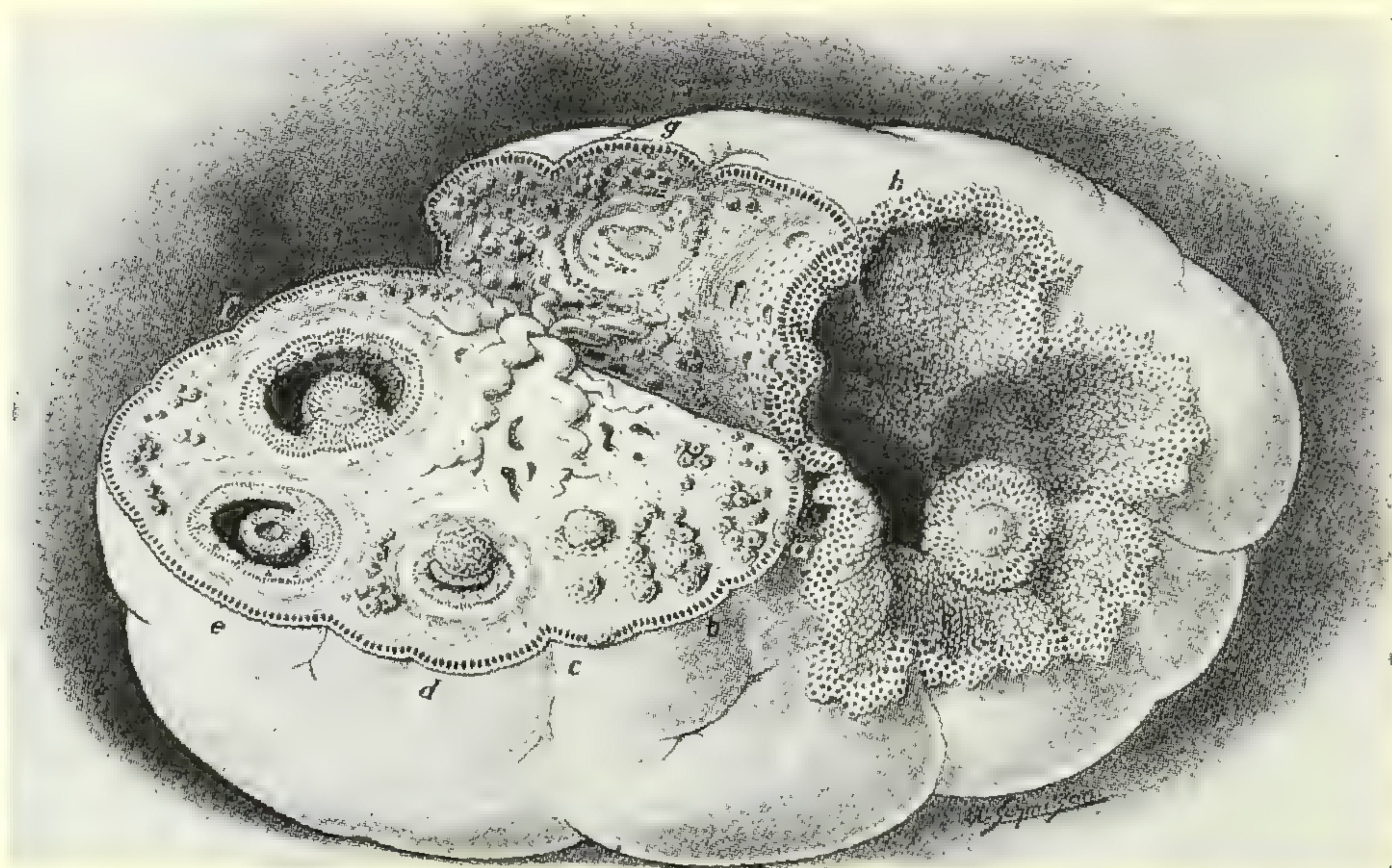


FIG. 1.—Ovary. (After Kahn.) (a) Primordial ova ; (b and c) Ova ; (d) Ovarian vesicle ; (e) Same in section ; (f) Outer wall ; (g) Ruptured vesicle.

(b) The cortex, which is rich in elastic tissue and blood vessels. The surface of the ovary is covered over with a layer of epithelium (Fig. 1).

The *cortex* interests us particularly.

The female reproductive cells first appear (Fig. 2) among the surface epithelial cells—which are small, smooth and cylindrical in form, whereas the oogonia are larger, rounder and lighter in colour. They have each a large nucleus with nucleolus. The cells of the germinal epithelium group themselves around the oogonia and form the primitive follicles, which descend and spread into the cortex. Each of these follicles consists of :—

- (a) The essential egg cell or ovum ;
- (b) The epithelial cells ;
- (c) The outer sheath of connective tissue.

Their normal development is as follows :

The follicular epithelium expands and swells, so that a *rim*, the *zona pellucida*, is formed around the ovum (Fig. 2). The formation of follicles begins in the embryo



and continues into the early years of childhood. According to Sappey, a three-year-old child has about 400,000 follicles. Their number then begins to decline; Henle estimates that a girl of 18 has about 36,000 follicles. The epithelial cells proliferate and between the layers appears a fluid, the *liquor folliculi*. This implies that the follicle is maturing; its diameter is between 0.5 and 1.2 mm. It consists of:—

- (1) The *theca folliculi*, with two layers :
  - (a) The fibrous *tunica externa* ;
  - (b) The *tunica interna*, which is vascular and full of cells, many of which are relatively large, spherical and of a yellowish tint and are therefore called theca lutein cells, with which we shall deal later in our study.
- (2) The follicular epithelium or *membrana granulosa*, in which there is a mound,
- (3) The *cumulus oophorus* ; in which lies
- (4) The *ovule*. The cells of the *cumulus oophorus* immediately surrounding the ovule branch out from it, like rays, and form the *corona radiata*.

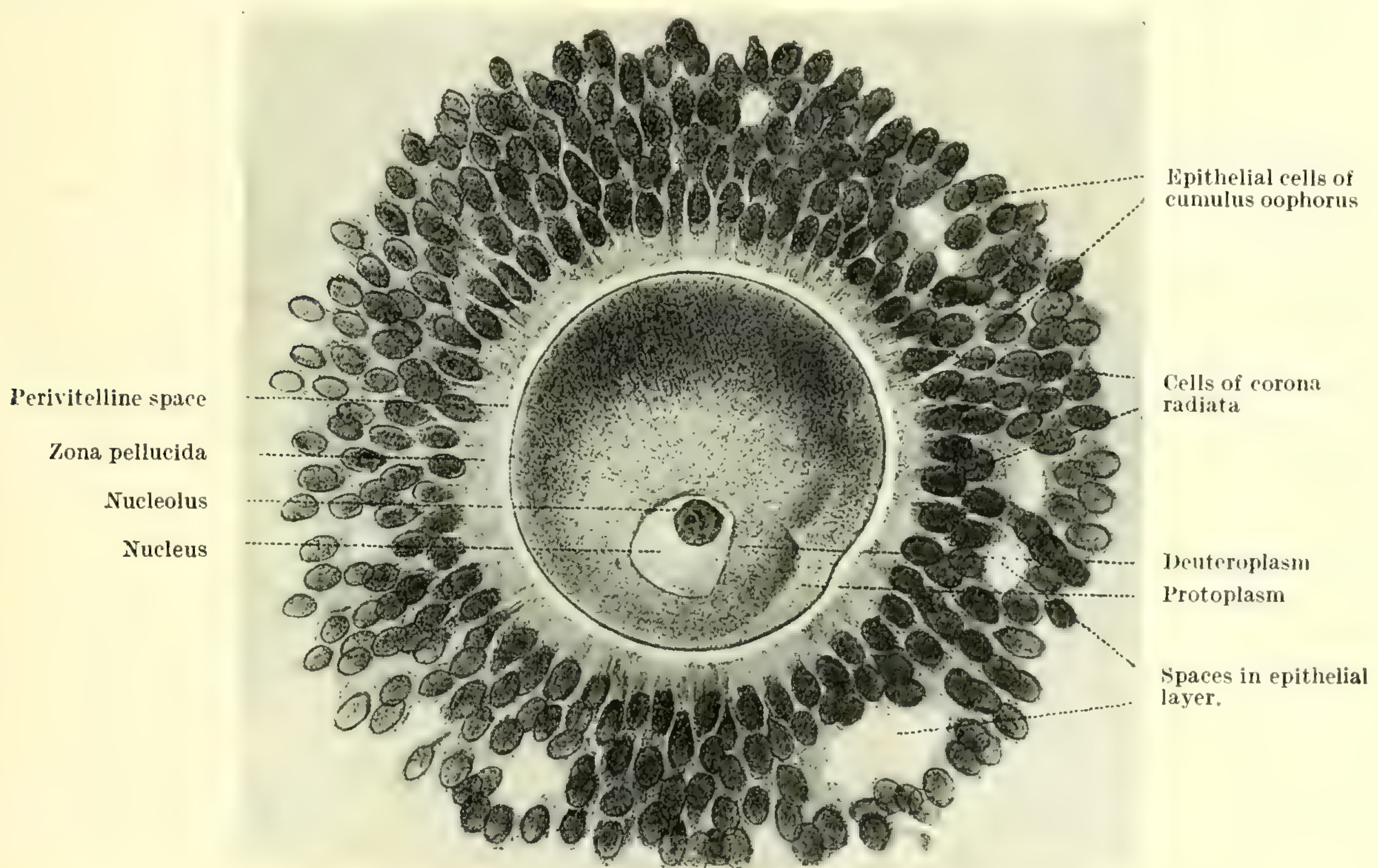


FIG. 2.— Egg cell of an adult. (After Bumm.)

Only a small proportion of the actual number of follicles reaches maturity, but some of the follicles mature. They grow and swell to the size of a small cherry or hazel-nut on their exterior surface, which becomes thinner, and finally yields to the pressure of the follicular fluid. Suddenly the follicular protuberance splits or bursts, and ovule and liquid are discharged with great impetus. The ovule, at this stage of its evolution, is 0.2–0.25 mm. in dimensions, that is, it is just at the borderline of visibility. The follicular rupture and extrusion of the ovule are termed *ovulation*. We shall return to these processes, but must now consider the

#### (b) Essential Sexual Characteristics

The first to consider, in woman, are the *ducts* (Fig. 3), known as oviducts, or Fallopian (uterine) tubes. They are tubular in form and extend from the cavity



of the womb (*fundus uteri*) towards the pelvic wall on either side. At their junction with the womb they are extremely narrow ; they would hardly admit a pig's bristle. But they gradually widen out, and terminate in a funnel-shaped mouth (*ostium abdominale*) with fimbriated edges, somewhat resembling a red carnation in full bloom. The tubes are lined internally with ciliated epithelium, whose cilia tend

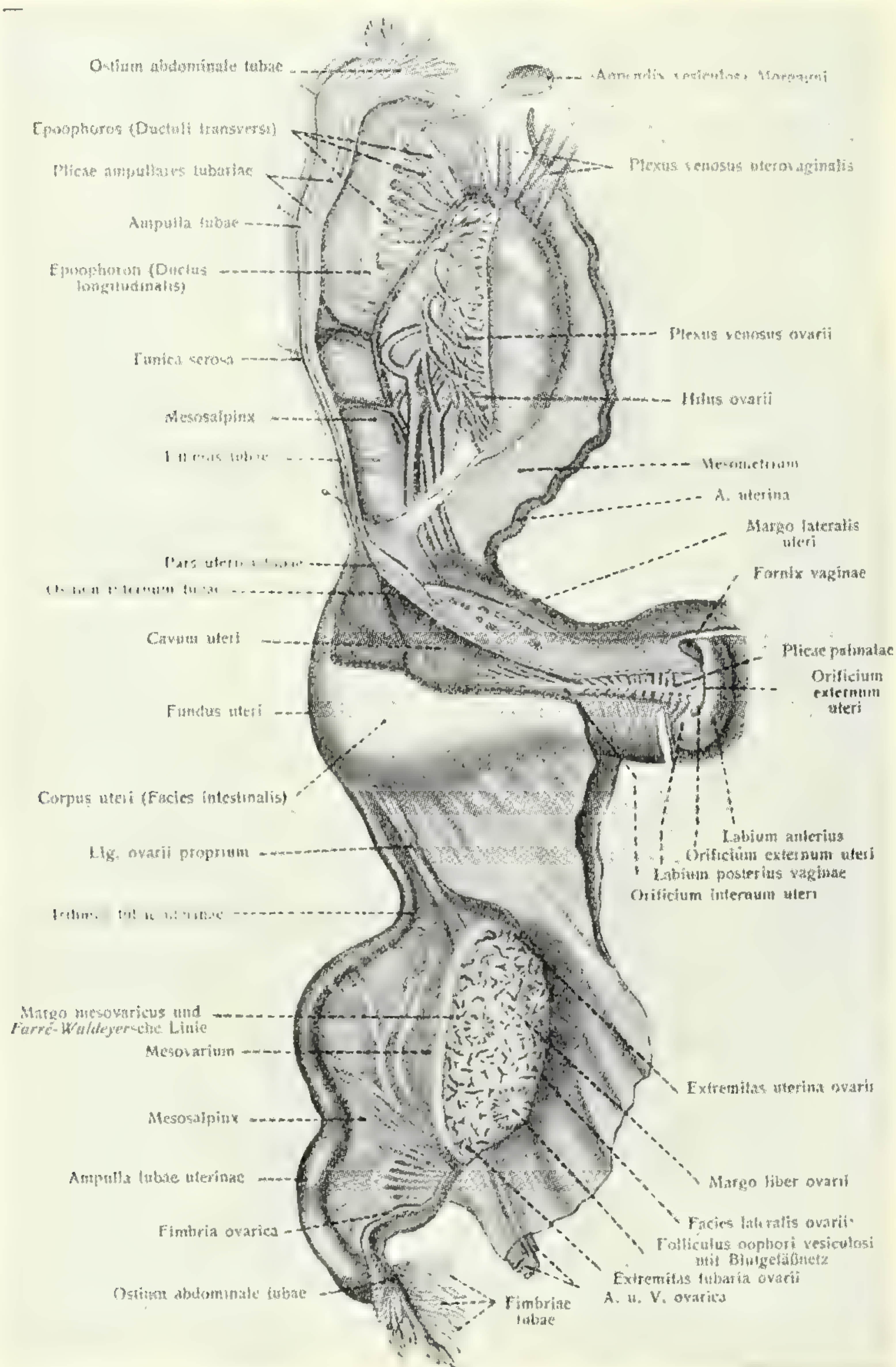


FIG. 3.—Uterus with appendages. (After Oertel.)

to drive the contents towards the uterus. When the follicle bursts, some have thought that the funnel-shaped end of the oviduct clasps the ovary, and, with a sudden convulsive suction—like a sea anemone—the ovum is drawn into the tube.

The accessory sex ducts in woman further include the *Parovarium* (*Ep-oöphoron*). They are delicate whitish tubules at right angles to the tubes, but opening into another wider duct parallel with the oviduct. Their walls are relatively thick and lined with the same type of epithelial membrane as the Fallopian



tubes, and they possess muscle fibres of their own. We do not yet know their function in the woman's organism, but structurally they would appear to correspond to the lobules of the *epididymis* in the man (see below). Moreover, they are always demonstrable, which is not the case with another accessory organ, the *Par-oöphoron*.

There are, further, the glands, termed, from their discoverer, glands of Bartholin (*glandulæ vestibulares majores*), corresponding to the bulbo-urethral glands in the male. These are duplex, have minute efferent ducts opening against the medial side of the margin of the labia minora, and are about the size of two peas or a bean. They lie (Figs. 4 and 6) right and left of the orifice of the vagina, and they pour

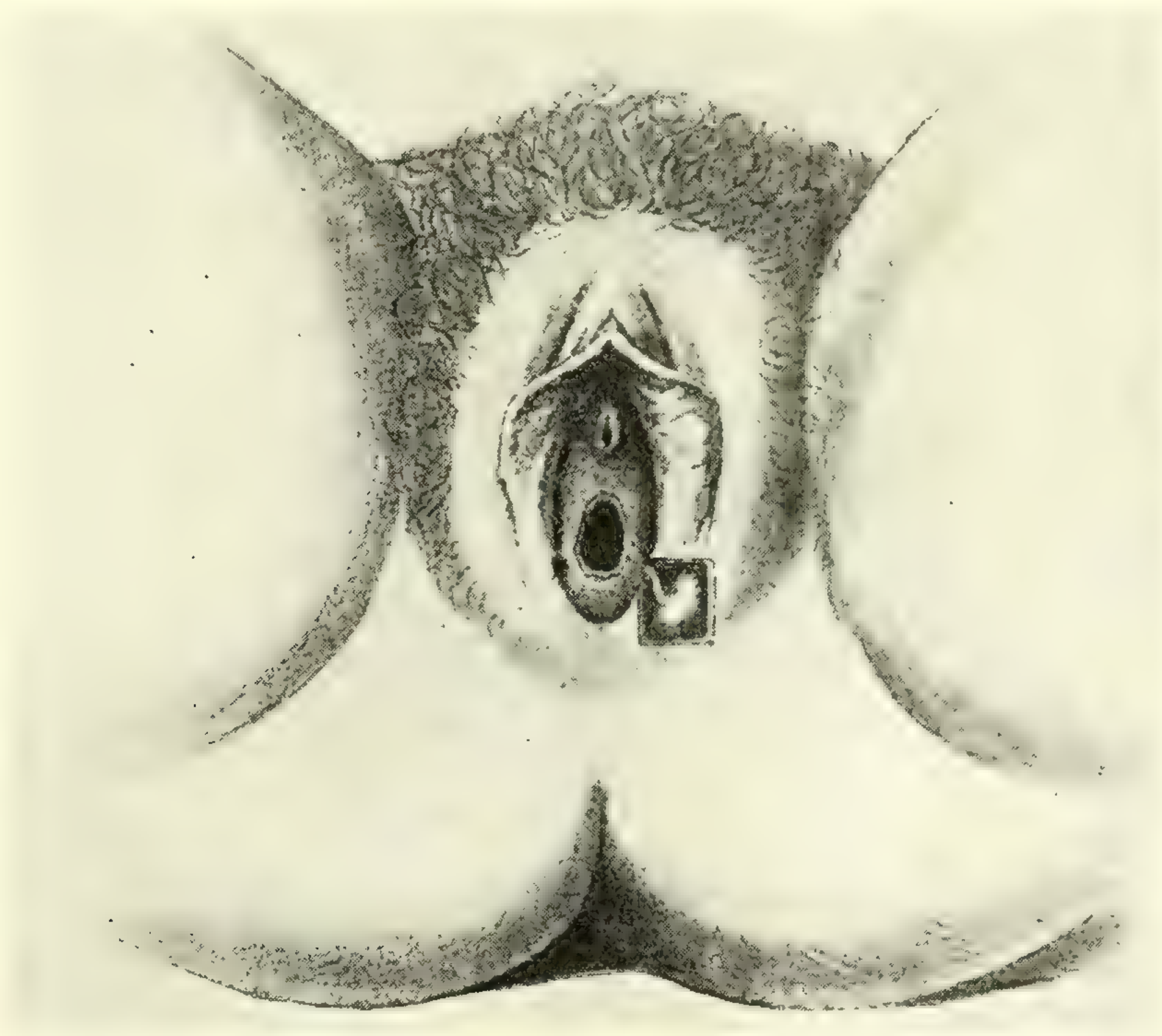


FIG. 4.—External genitals showing gland of Bartholin. (After Meyer-Ruegg.)

out a secretion during sexual excitement, which lubricates the opening of the vagina.

The uterine group of sex organs includes the Uterus, or Womb, and the vagina. The latter is a muscular passage running upwards and backwards from the vulva into the body for a distance of between 7 and 8 cm. (posterior measurement). Normally its anterior and posterior walls are in apposition. The upper end widens into the vaginal vault or *fornix*, into which extends the lower portion of the uterus (*portio vaginalis*) with the opening (*orificium externum uteri*) or *external os uteri* (Figs. 3, 8 and 9). The adult uterus itself, in its non-pregnant state, is about the size and shape of a pear (Fig. 3). Its main body, or *corpus uteri*, is roughly triangular: wide at the upper extremity or *fundus*, from which the oviducts branch off at either side, and narrowing towards the lower extremity, or *cervix uteri*. The uterus is a mobile organ; its exact position in the body depends, for example, on the respective pressure and fullness of bladder (in front) and rectum (behind). It is at an angle of about 80 degrees to the axis of the vagina.



Between the cervix and corpus is the so-called isthmus uteri, of which the length is typical and distinctive in the changing phases of growth and life. Before puberty, the isthmus is long relatively to the rest of the organ, and its walls are lax and thin. During puberty, it becomes comparatively shorter, and its walls thicken and grow firmer; after the change of life it disappears.

Finally, we must enumerate the *conjugal* sex characteristics: they are the external genitalia, and include, in woman, the vestibule (Fig. 7) with the clitoris (Fig. 6) in front and the labia majora, or outer lips, on either side. The vestibule



FIG. 5.—The normal vulva with legs closed. (After Stratz.)

contains the urinary orifice or meatus, the introitus or vaginal orifice and the openings of the minute ducts of Skene's glands (*ductus paraurethralis*).

In the virgin the outer lips or labia majora approach each other, so that the clitoris hardly protrudes. They have thick deposits of adipose tissue, are somewhat pigmented and covered externally with hair. Between them are the *labia minora* (*nymphæ*), or inner lips, which are always hairless. The upper folds arch over the clitoris in front and the lower merge into the *labia majora*, toward the perineum. The clitoris (Fig. 10), corresponding to the penis, has a glans (*glans clitoridis*) with prepuce, and consists of a cylindrical mass of erectile tissue so that it is capable of



erection (see Kobelt). Two further erectile masses of tissue lie behind the labia minora; they are the bulbs of the vestibule and serve to congest and expand the vulva, causing it to open slightly, or pout. Above the clitoris, on the exterior

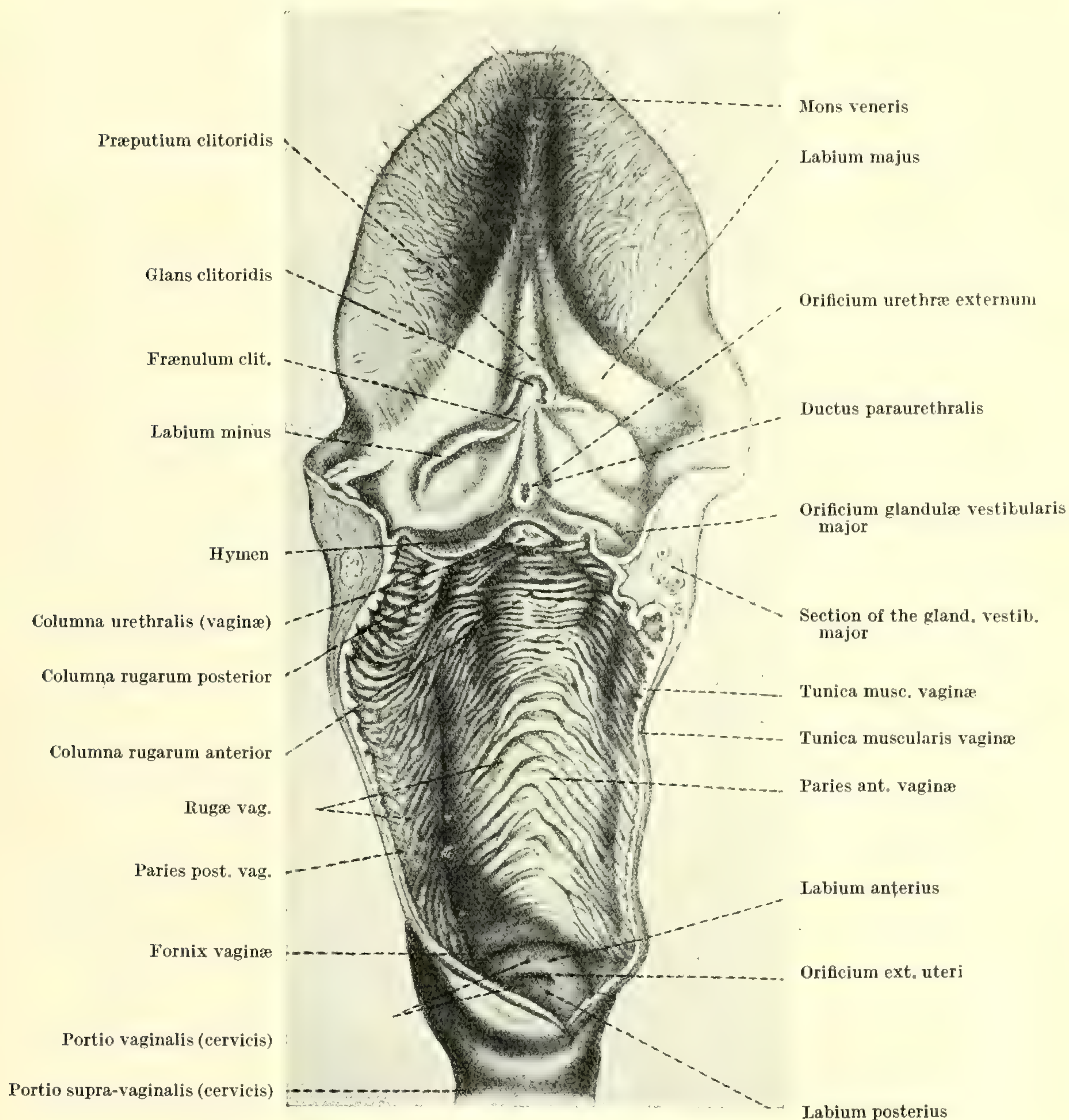


FIG. 6.—Dissection of vagina. (After Halban-Seitz.)

surface of the body, is a thick cushion of fatty tissue (Fig. 5) called the *mons veneris* or *mons pubis*, which is covered with hair during sexual maturity. Gussenbauer has dealt with the vascular system of the genitals in detail, and to this the reader is referred.

### (c) The Determinative Sexual Characteristics

These are the glands of internal secretion, or ductless glands. The whole subject of these glands is of the highest significance and still far from fully explored,





FIG. 7.—External female genitals with separated labia. (After Polano.)

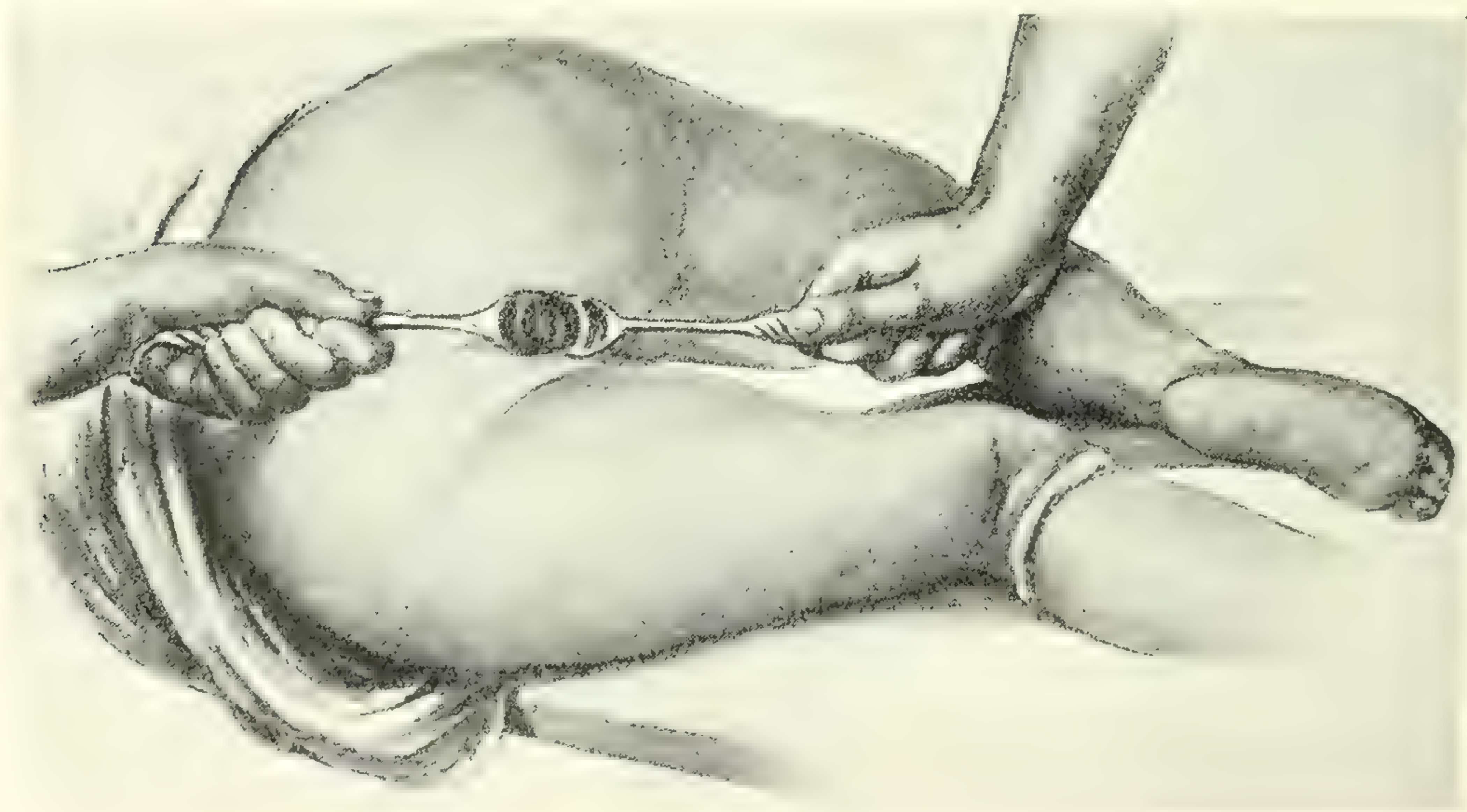


FIG. 8.—Os uteri. (After Polano.)



but can only be dealt with very briefly here. We would refer readers to the works of Biedl, Leschke, Weil, Gley, Waldeyer.<sup>10</sup> Classical medicine anticipated modern discovery by its doctrine of "humours." Aristotle, Hippocrates and Galen believed that blood, yellow and black bile and phlegm were the basic human substances. Their due proportion and interaction gave health and preserved life, their unbalance brought disease or death. The increase of exact knowledge in histology drew attention to neural structures and functions; the nerves were considered the keys to human physiology and psychology and all was ascribed to "nervous correlation." The composition and circulation of the various liquid secretions in the body were neglected, and many important glandular structures were declared useless and "vestigial." But it could not be denied that operative removal of these caused the gravest injuries, and this drew attention to their study. In 1849 Berthold proved that the sexual urge was not obliterated even if all nerve supply to the gonads were cut off.

He then observed and recorded the changes in the whole organism which followed the removal of the male gonads by castration; and the restoration of

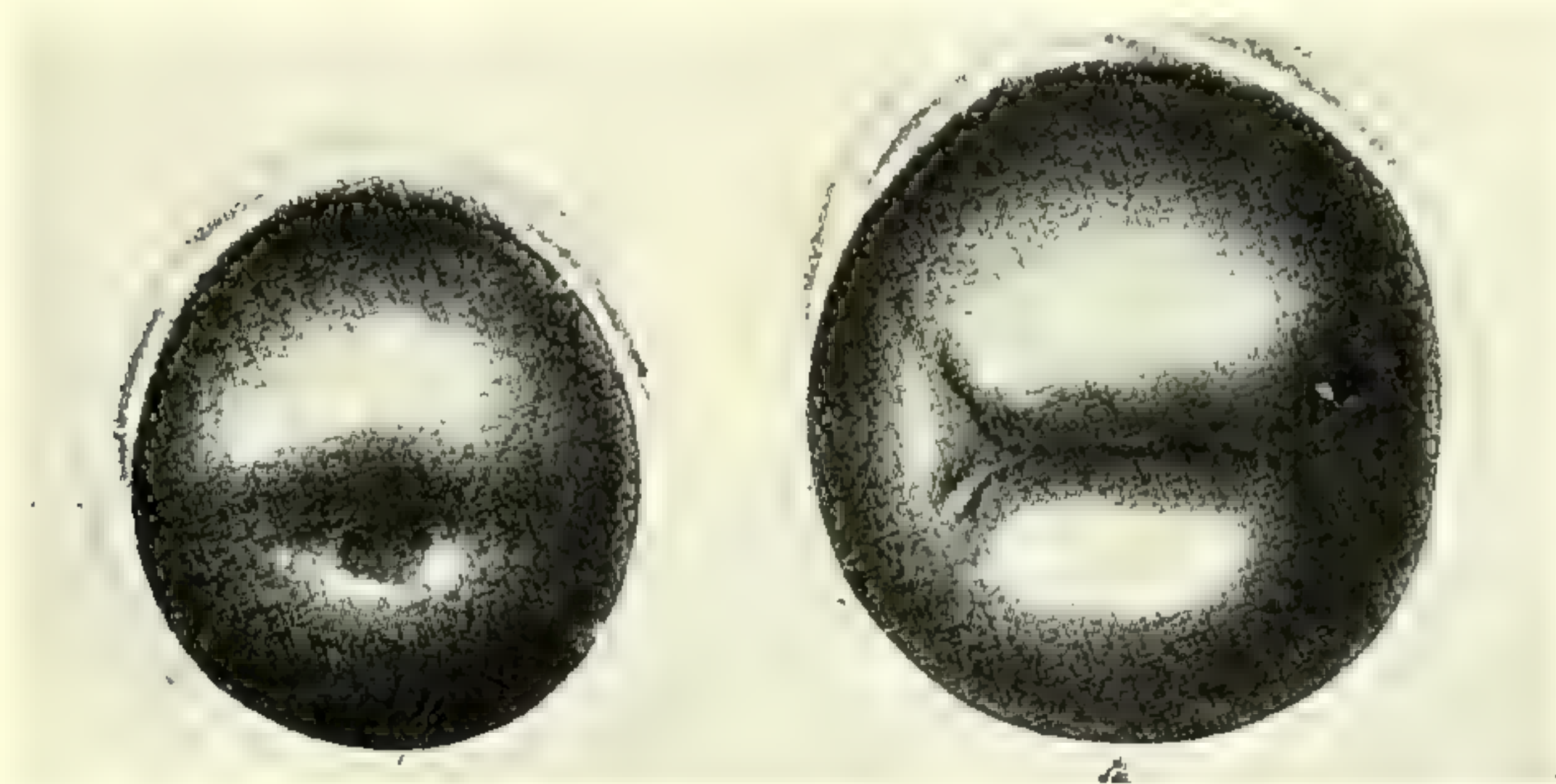


FIG. 9.—Vaginal portion of the uterus showing the os uteri in (a) a nullipara and (b) a multipara. (After Oertel.)

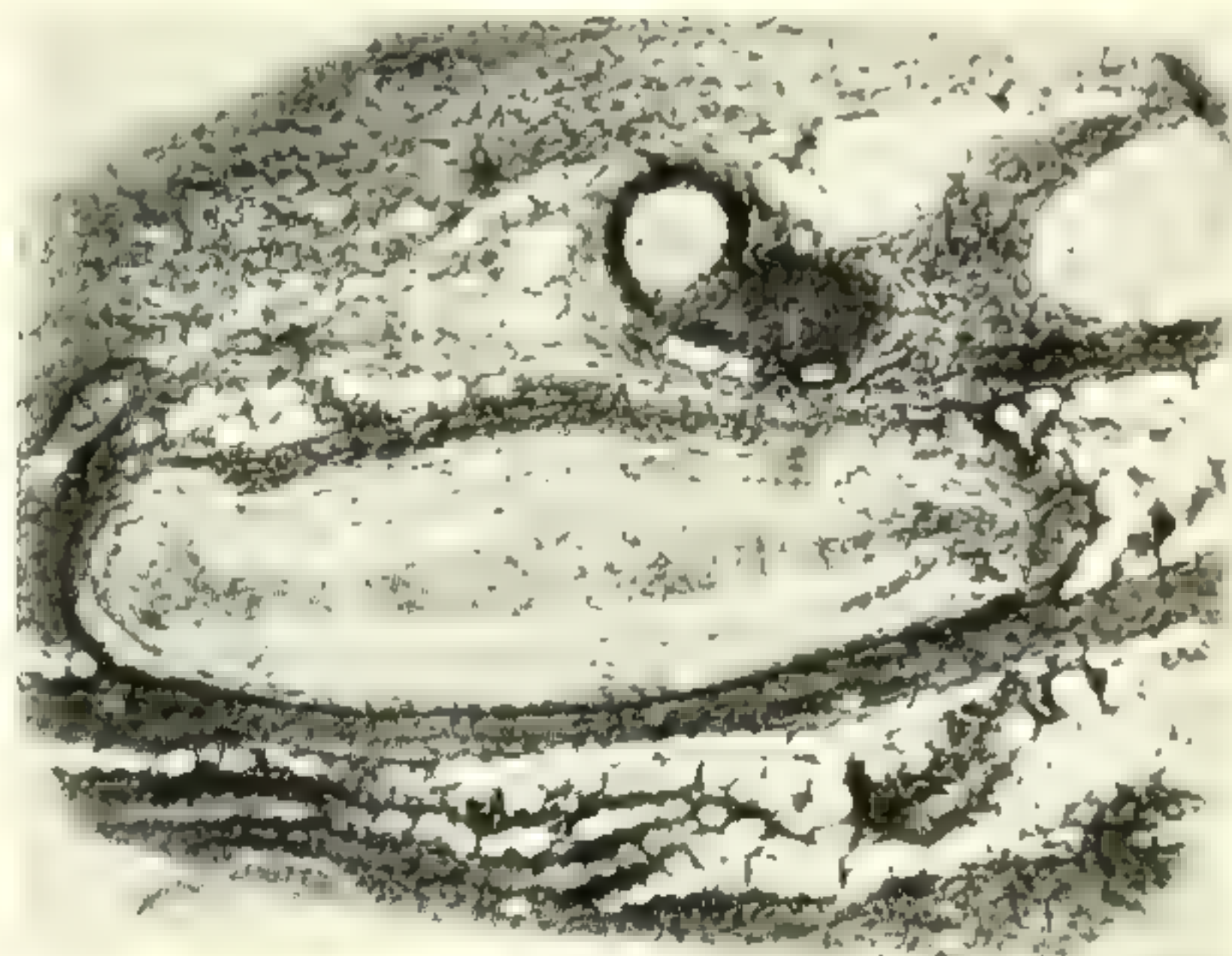


FIG. 10.—Tactile corpuscle in the clitoris. (After F. Fränkel.)

normal functions and qualities following on the regrafting of the testes—not necessarily on their natural site.

But these epoch-making discoveries were soon forgotten, and when Brown-Séquard, at the end of the nineteenth century (1889), demonstrated that an injection of testicular extract was followed by general physical rejuvenation, he was simply ridiculed. Nevertheless, the conviction gradually grew that the secretions of certain glands were carried by the blood stream and caused the most pronounced results, independently of the nervous system. Claude Bernard championed this theory of the importance of the internal secretions. Bayliss and Starling termed these secretions hormones (*ὁρμῶν*, set in motion). Aggregates of cells in the form of glands which secrete these hormones are termed endocrine glands (*κρίνω*, to separate). They differ from the glands previously studied and classified in that they have no ducts, but pour their secretions straight into the blood stream. And this has led to a change in our former concept of "glands," for we now know that, *e.g.*, the red portion of the bone marrow secretes such substances. Not all these endocrine glands can be reckoned as determining sexual characters, but most of them have a share in determining sexual development. Some of the hormonal glands inhibit or hinder sexual development; others again, promote it. Also some glands, the sexual glands, manufacture internal as well as external secretions. Moreover, all these glands have a definite effect on one another, and they form a



system (Fig. 11) whose individual component organs are quite distinct, but closely interwoven by means of the circulation of the blood and the vegetative nervous

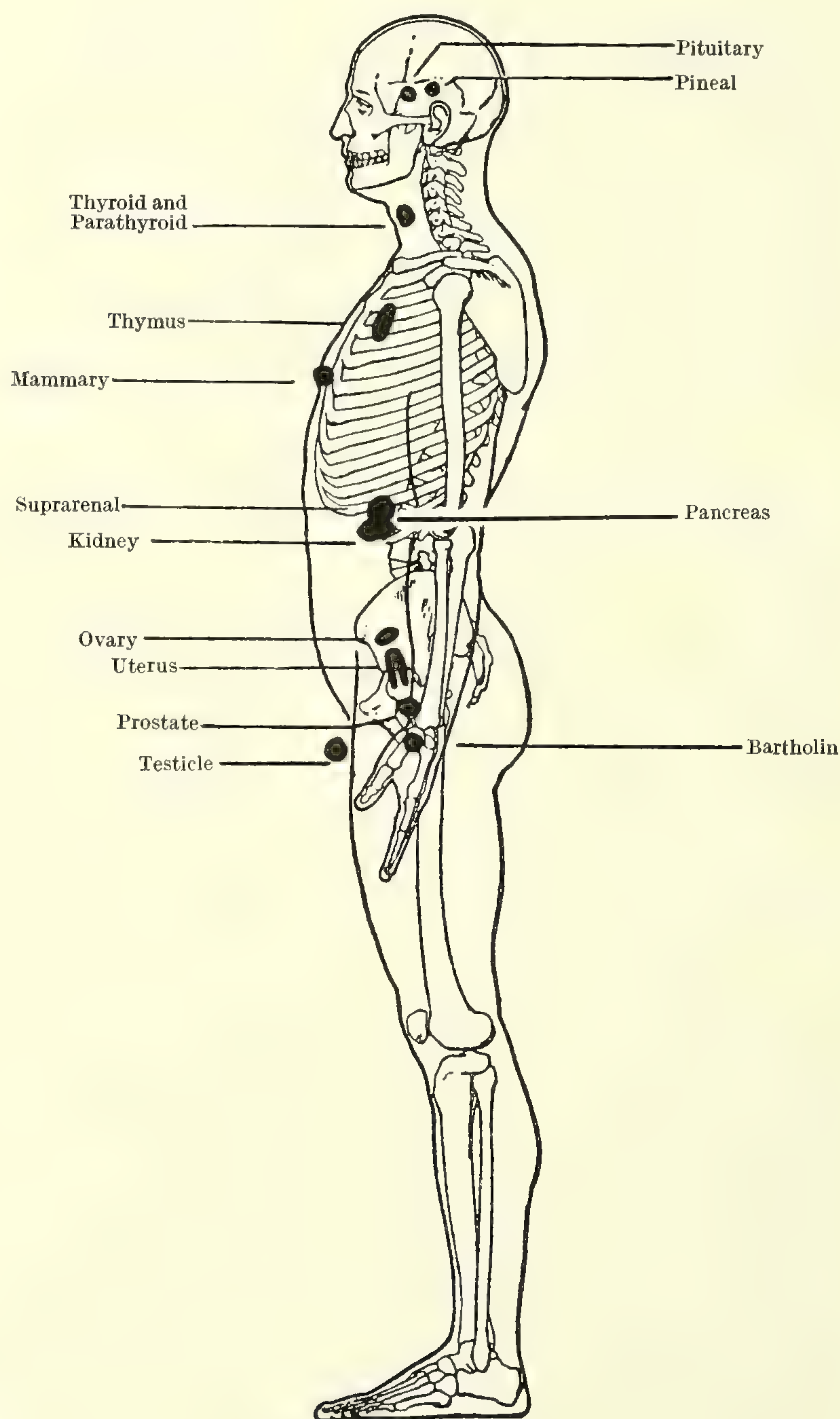


FIG. 11.—Diagram illustrating the glands of internal secretion. (After v. Reitzenstein.)

system. If any one of these endocrine glands is affected and its action either stimulated or decreased, the whole endocrine system is thrown out of gear and its harmony is disturbed. Let us briefly survey them. The first is the *hypophysis cerebri* or *pituitary gland* (cf. Fig. 12). It is situated below the brain on the so-called



sella turcica. It consists of two main portions, the anterior and posterior lobes. The posterior lobe is mainly composed of a mass of cells (*neuroglia*). From it two active hormones are obtained. Pitosin and pitressin are both present in Pituitrin. It increases the blood pressure and accelerates labour or brings it on prematurely by causing contractions of the uterus. The active principle of the posterior pituitary lobe has been put on the market in medical preparations such as Pituitrin, Pityglandol, Hypophysin, etc. It is said to produce normal parturition. Furthermore, the posterior lobe increases the consumption of oxygen, whereas the front lobe decreases it; it causes increase of weight and promotes the peristaltic action of the intestine, thus causing rapid defæcation. If the posterior lobe is underdeveloped or affected by tumours, etc., an enormous development of fat, in peculiar distribution, ensues, accompanied by deficient metabolism and arrested development of the genitals, with cessation of the sexual impulse (*Dystrophia adiposogenitalis*). The distribution of adipose tissue becomes feminine; it accumulates on the hips, buttocks, thighs and breasts. In men, the beard and pubic hair fall out and the voice does not "break." In women, the hairs on the pubes and in the armpits are also lost and the periods cease.

Two hormones are produced in the anterior lobe: (a) a growth-provoking one, and (b) a sex-maturing one. Oversecretion of the growth-provoking hormone produces gigantism or acromegaly, as described below. Under-secretion induces dwarfism. The sex-maturing hormone appears to be double.

(1) Prolan A, which stimulates œstrus and maturation of the Gräafian follicle;

(2) Prolan B, which stimulates Corpus Luteum formation, and so prevents abortion. The

Zondek-Aschheim test for pregnancy, described on page 33, depends on the presence of Prolan B in the urine.

The functional disturbances of the anterior pituitary lobe are of interest to us. Excessive functional activity arising in adult life causes acromegaly; the ribs increase in length and deform the thorax; hands, feet and the bones of the jaw and skull become similarly misshapen. If this excessive hormonal activity occurs in early childhood, the ossification of the centres of the larger bones is delayed, growth is abnormally long, and gigantism results. Both in gigantism and acromegaly (Fig. 13)\* there is frequently a later atrophy of both interior and exterior genitals, diminution of desire and even impotence. Deficient function of the anterior pituitary lobe causes a severe disturbance of metabolism, which is known as cachexia hypophyseopriva. Total destruction of this lobe leads to death, the body becomes abnormally thin and prematurely senile, hair and teeth fall out and sexual functions and emotions are extinguished. If atrophy of the pituitary occurs in children, a peculiar type of dwarf is said to be produced; an infantile expression of countenance is generally combined with adiposity of the trunk and sometimes with deficient sexual development. This condition is known as *ateleiosis*, but this is a mutation and may not be due to changes in the pituitary only.

Another important endocrine organ is the *Epiphysis* (Figs. 14A and 14B) pineal gland, or conarium pinealis. It makes its appearance at the end of the fourth or beginning of the fifth week of embryonic life, increases in size and attains its greatest



FIG. 12.—Section through the pituitary of a pregnant woman (After Aschner.)

\* See F. R. B. Atkinson.



development in the early years of childhood. From about the seventh year onwards there is a proliferation of connective tissue and an accompanying atrophy of the pineal cells, which suggests that the main activity of the gland ceases with the advent

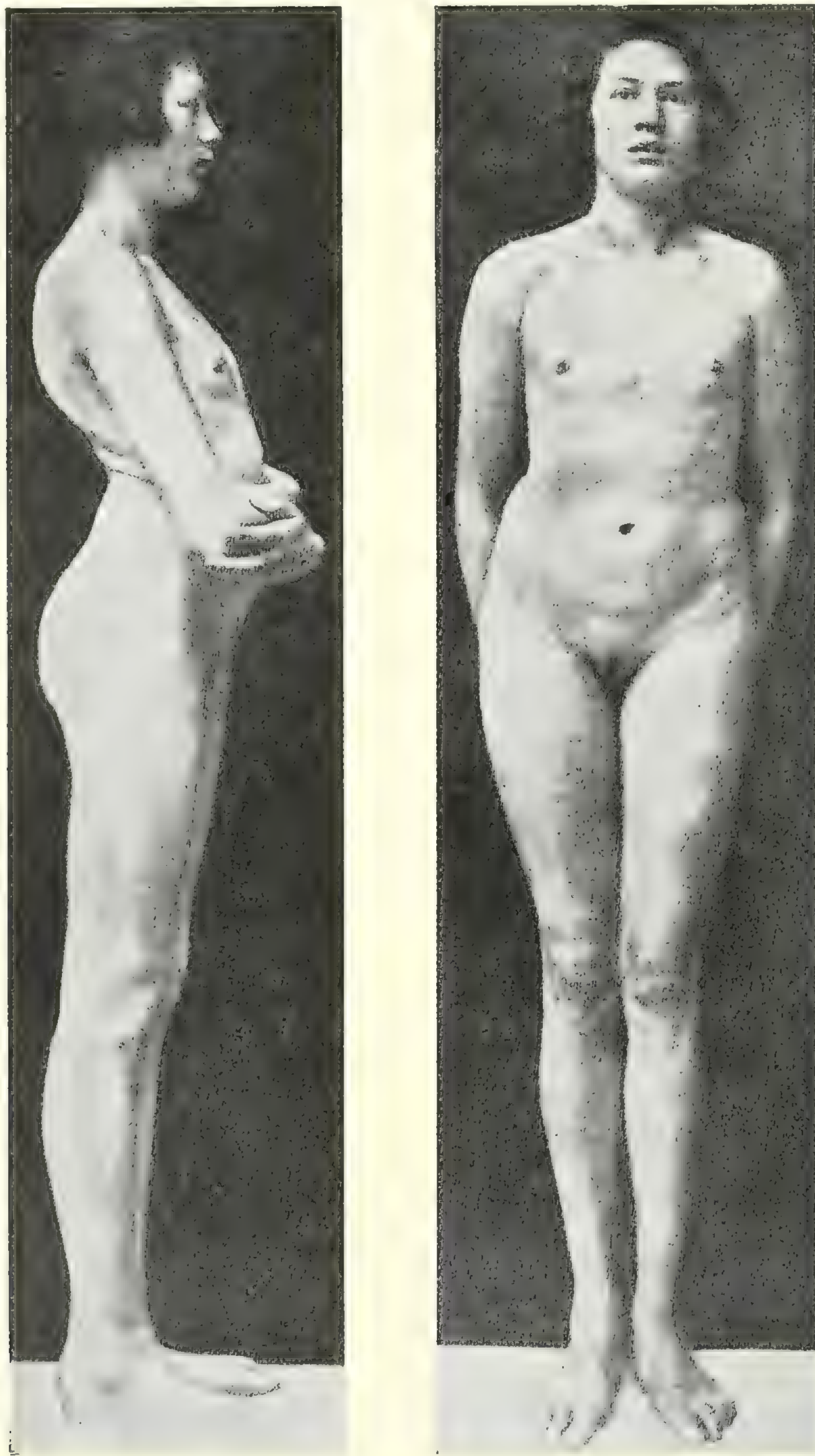


FIG. 13.—Acromegaly.

of puberty. It appears, indeed, possible that the epiphysis inhibits the sexual evolution and must, therefore, cease to function before sexual maturity can supervene. The decrease of pineal secretion leads to abnormal precocity (*pubertas præcox*). In such cases menstruation is established before the seventh year and



boys are capable of erection and ejaculation at the same age. Or this amazing precocity can be manifested intellectually, *e.g.*, in infant prodigies, Biedl applying

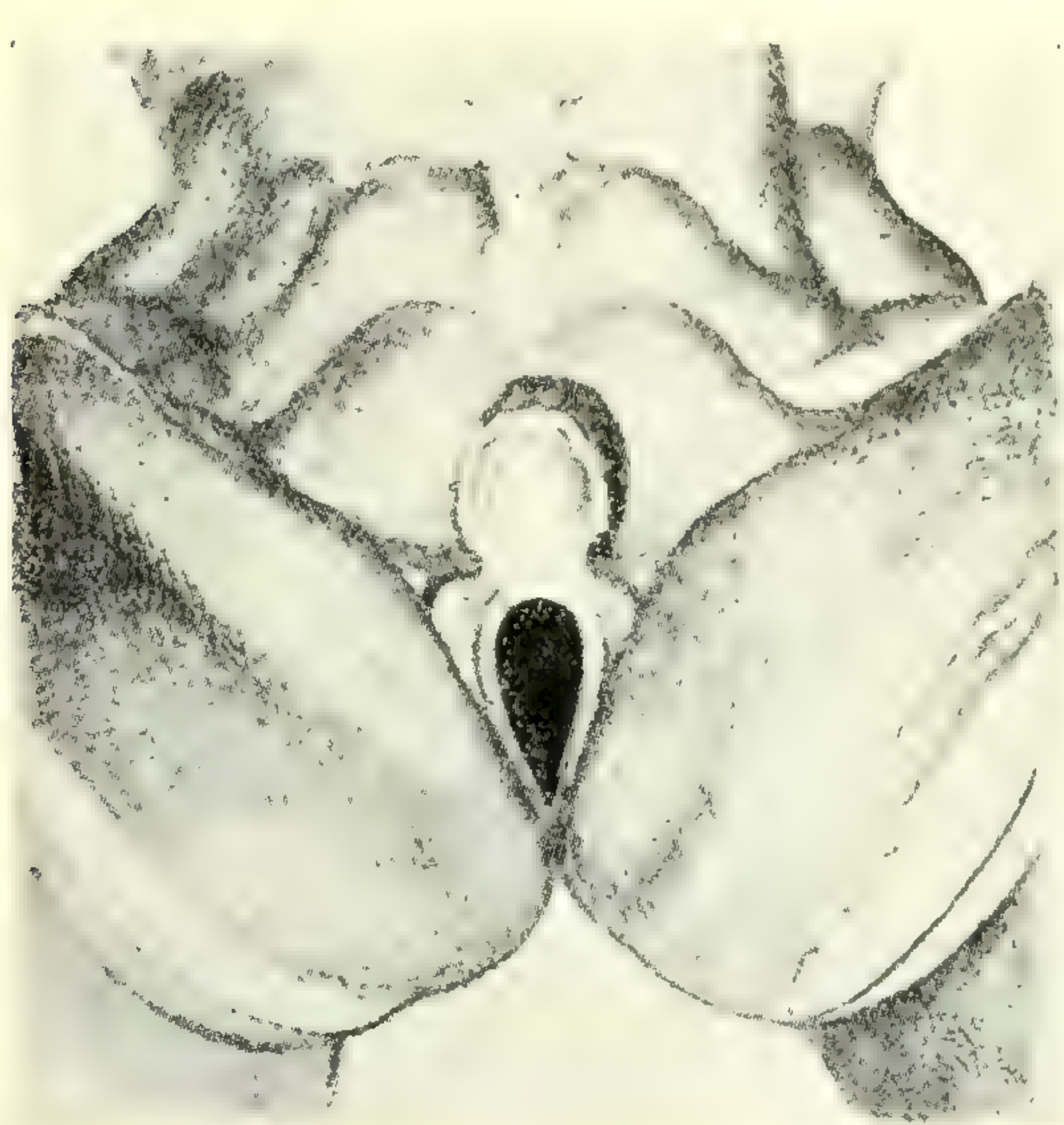


FIG. 14A.—Pineal body in a 16-year-old virgin.

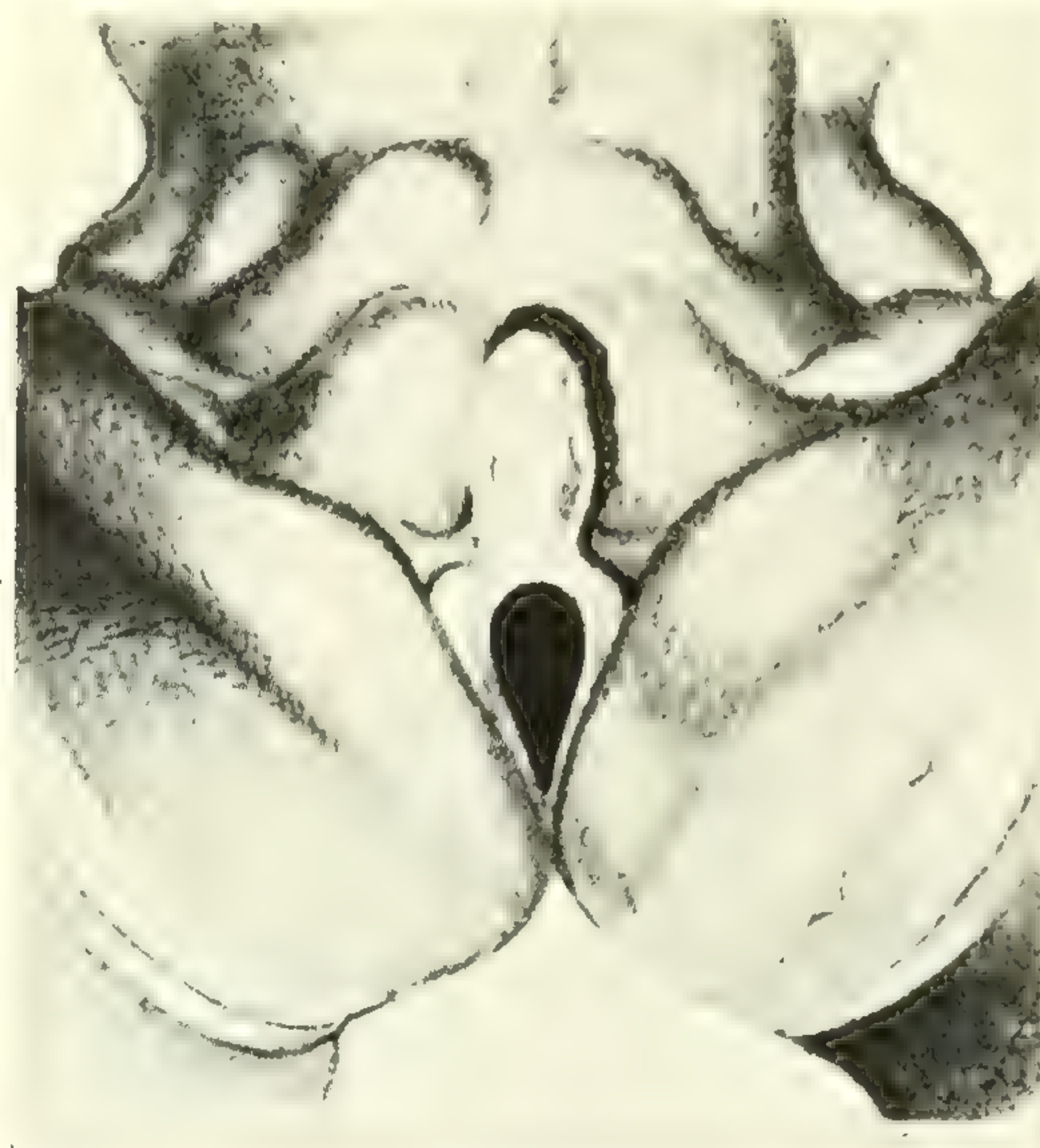


FIG. 14B.—Pineal body in a 16-year-old primipara at the end of pregnancy. (After Aschner.)

the term *apinealism* to such cases. If the pineal gland is removed or destroyed, the result is a gross adipose deformity somewhat similar to that caused by obliteration

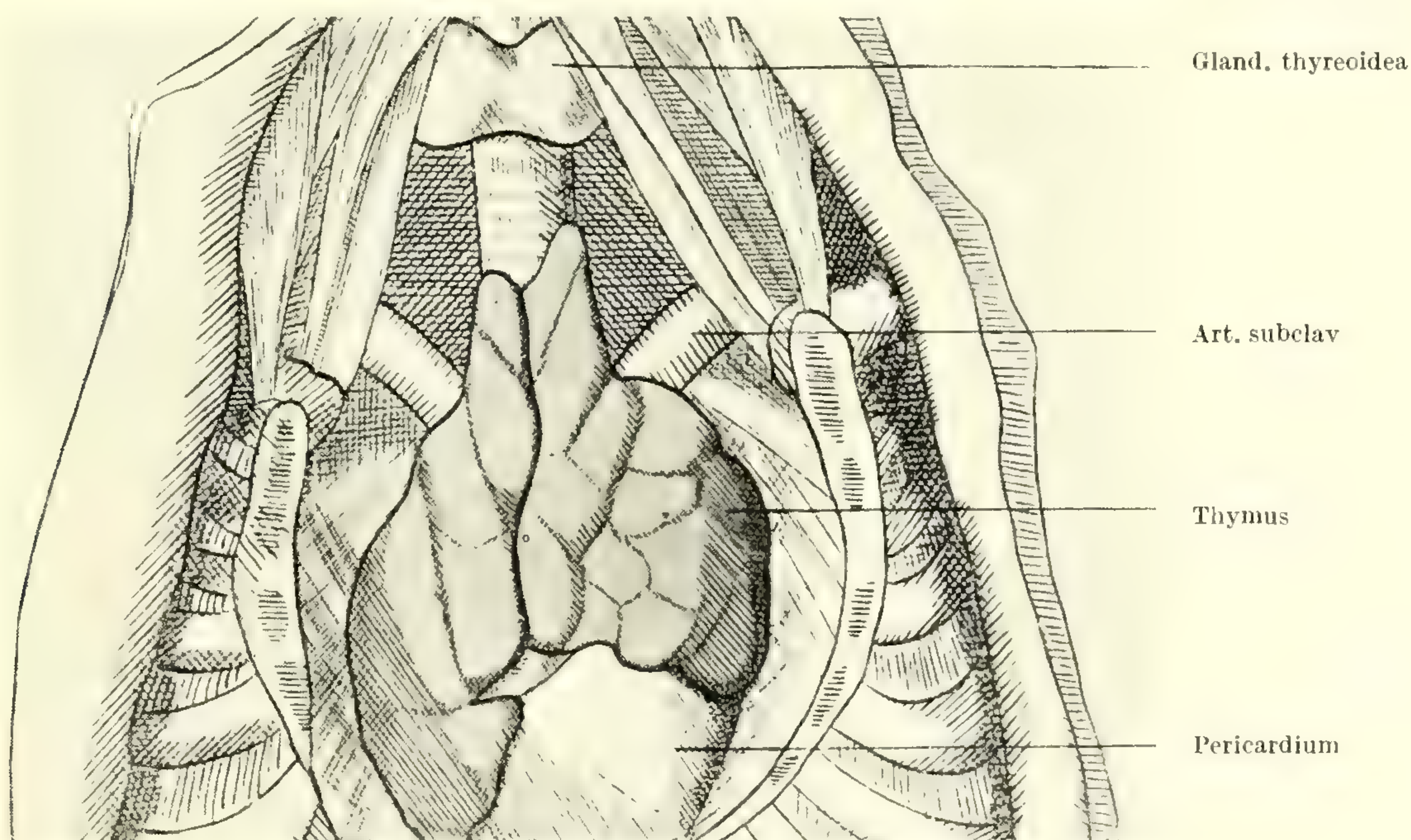


FIG. 15.—Thymus and thyroid. (After Merkel.)

of the *pituitary*. Leschke is probably right in assuming that both sets of diseased conditions are caused by the pressure of the affected glands on certain portions of



the diencephalon. Pineal extracts are claimed to decrease sexual sensation, followed by increased uterine contractions in pregnant cases and a greater flow of milk during lactation. For a survey of recent literature see Jelliffe. The same effects are caused by the glandular activity of the *thymus* (Figs. 15 and 16). This gland is situated in the chest cavity above the heart, and it is large in children, decreases from between the 10th and the 14th year (at birth it weighs approximately 10–15 gm.; at two years old, 25; at puberty, 40, and decreases to 15 or 10 gm. after the 45th year). The thymus also appears to be composed of different groups

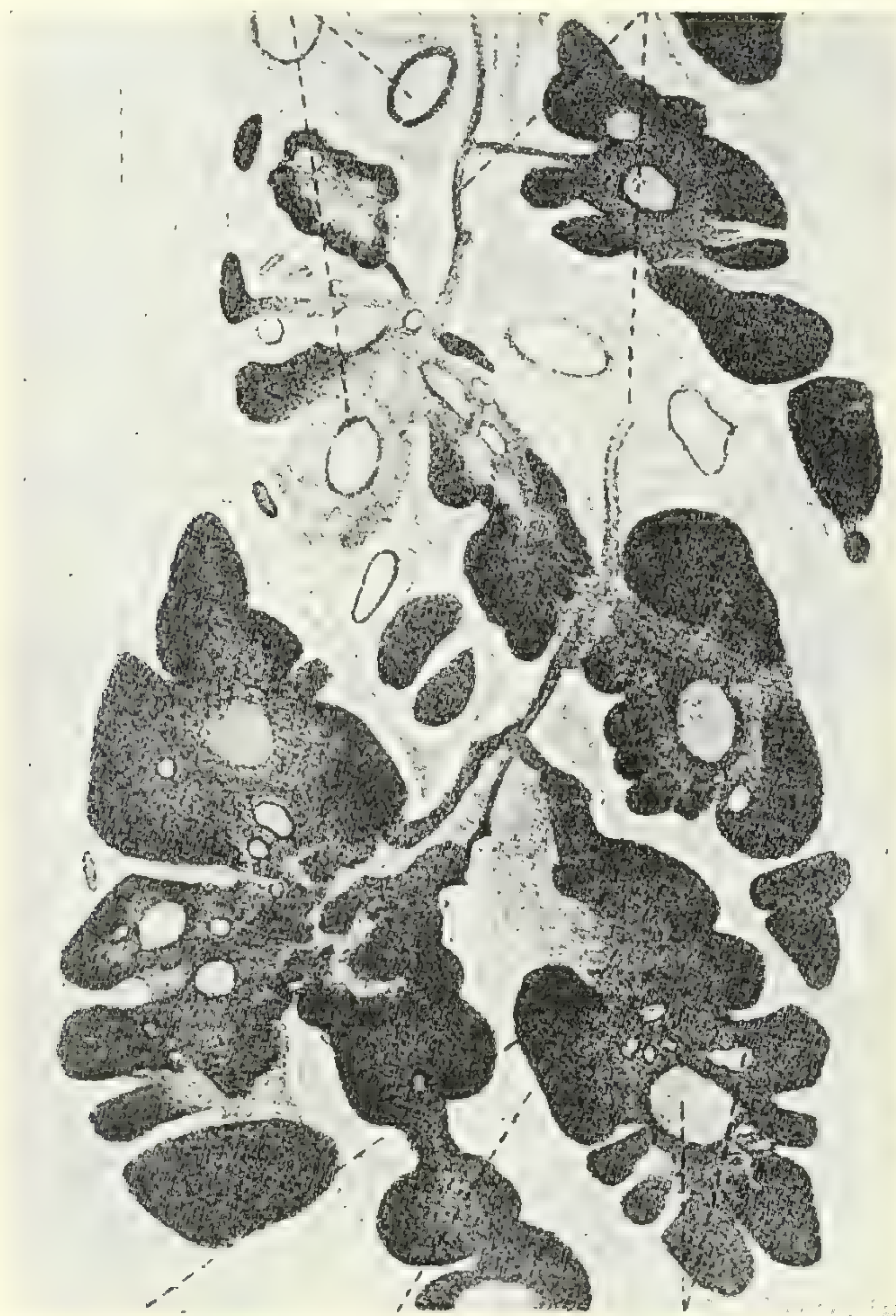


FIG. 16.—Section of thymus in 13-year-old child, showing Hassall's bodies. (After Stohr.)

of cells, with different functions; one group appears related to the spleen and the formation of blood. The other group has been supposed to promote the growth of the gonads, but inhibits their full functional activity. If the thymus is removed the testes grow much larger, but soon diminish again; *i.e.*, their seminal portion is injured but the interstitial portion thrives. And, after castration, the thymus trebles in size.\* Defective function of the thymus disturbs the osseous formation, but in a different way from the cerebral endocrine glands; a condition resembling rickets is produced, owing to deficient lime. It has also been observed that extracts of the thymus gland are an antidote to muscular exhaustion. If the thymus does

\* [These figures and assertions are disputed.]



not decrease after puberty a hypertrophy of the whole lymphatic system ensues. The sex organs atrophy and extreme obesity results; the skeleton and growth of hair assume the characteristics of the opposite sex. (Cf. Marine and Oswald, and for recent work on the thymus see Hammar, C. Smith, Cooperstock and Park and McClure.)

A specially important endocrine organ is the thyroid gland (Figs. 15 and 17), so-called from its square shape (*θυρεός*). It affects almost all the metabolic manifestations and the whole physique, growth, sexual development and psychic qualities, in collaboration with the pituitary and suprarenal glands. This group is, therefore, collated under the term *synergetes*. Destruction of the thyroid is fatal to the health and causes premature death. It is supposed to secrete various distinct hormones, and also to possess the quality of neutralising certain toxic products of metabolism. In the course of research an American, Kendall by name, claimed to succeed in isolating one of the thyroid hormones. He called the resultant substance *thyroxine*, and its chemistry has been further elucidated by Harington. We must realise the preponderant influence of thyroid endocrines when we know that the whole of the blood in the dog flows, according to Tschuowsky, through this gland sixteen times in the twenty-four hours.\* The thyroid is situated in the throat on either side of, and underneath, the larynx. Enlargement of the thyroid (goitre) is frequently accompanied by a special form of disease, Graves' disease. Sufferers from this complaint are always in a state of extreme agitation, the heart beats rapidly and the eyeballs protrude (hence the term exophthalmic goitre): the metabolic and assimilative processes are much accelerated. These symptoms are generally accompanied by an enlargement of the thymus and an atrophy of the adrenal bodies, the ovaries and the pancreas.

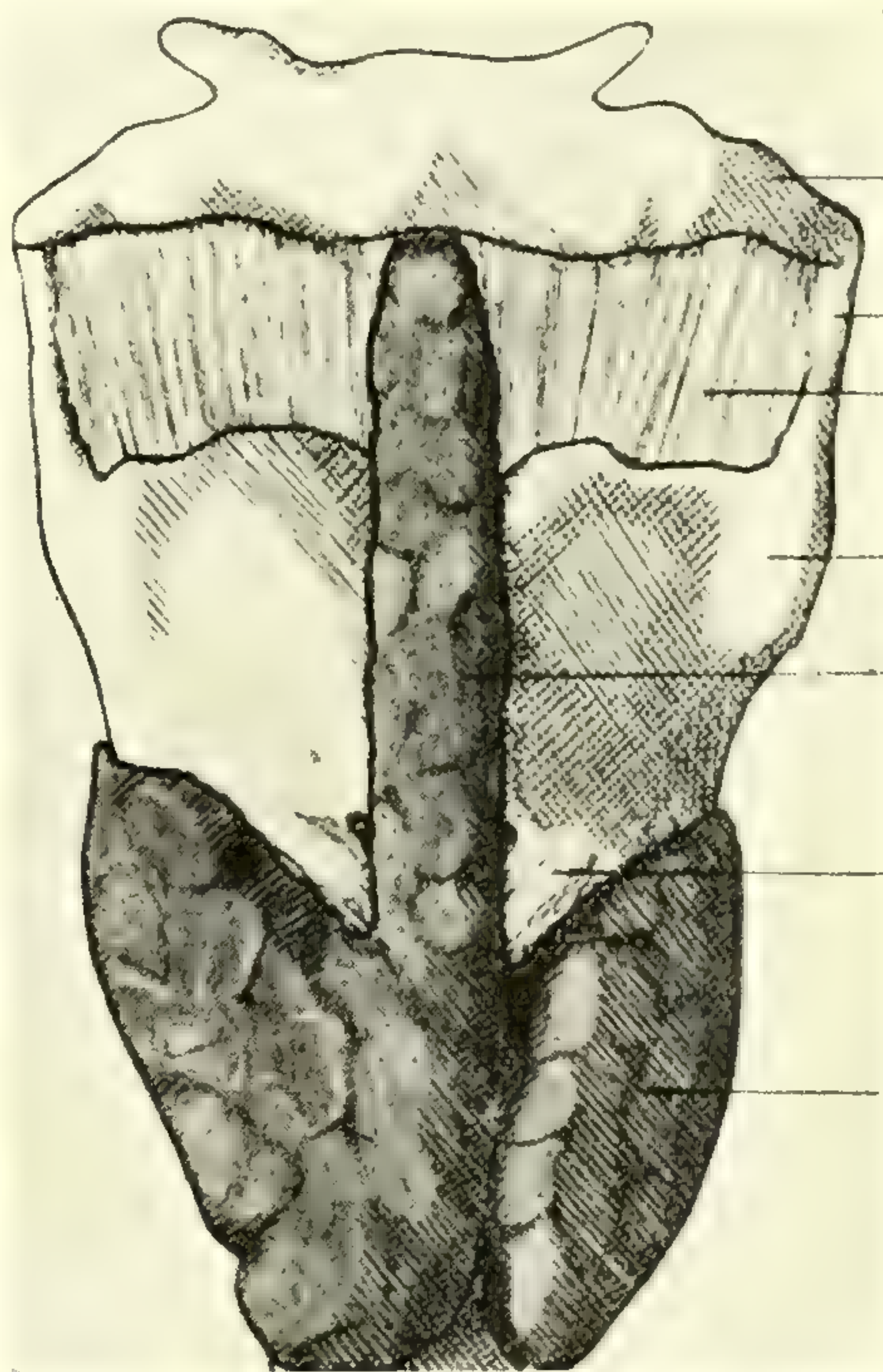


FIG. 17.—Thyroid. (After Merkel.)

Deficiency of the thyroid is followed by other manifestations. The whole connective tissue of the body proliferates and becomes infiltrated with a mucoid substance of doubtful chemical nature. This process begins in the tissues of the face and the skin hardens and thickens so that the eyes have narrow slits and immobile lids. The degenerative process extends to the rest of the body, the hair falls out, finger and toe nails split, the movements become clumsy and difficult. This pathological condition is termed myxoedema, and we can distinguish a congenital form of it, in which there is thyroid deficiency from birth. Another complaint caused by thyroid deficiency is infantile myxoedema. Here the patients become apathetic and, finally, imbecile (Figs. 18A and 18B), as do also persons in whom the thyroid has been excised; this condition is termed *cachexia strumipriva*: and is sometimes combined with a cretinism in which the goitre is not soft and vascular,

\* [The supply of blood to the thyroid is considerable, more indeed in proportion to its size than that to the brain. It is clear that this implies that its functions are of great importance, which is becoming more and more fully recognised as experiments proceed.]



but hard and exsanguine. It is significant that the thyroid is enlarged during pregnancy, and similar observations are said to have been made in the case of girls who practised masturbation. During pregnancy the endocrine functions of the ovaries are stimulated, and seem to react on and enlarge the thyroid and thus



FIG. 18A.—Cretinism, due to thyroid deficiency in a 15-year-old girl.



FIG. 18B.—The same case after six years' treatment with thyroid extract. (After Slarek and Weygandt.)

increase metabolism, in order, so Weil suggests, to meet the needs of both mother and child (see Mayo and Plummer).

[Recent gynæcological work on the thyroid has been assisted by the mass of material which has been accumulated on the effects of feeding thyroid extracts and of thyroidectomy on the reproductive system in animals. The dependence of the ovary upon the action of the thyroid is becoming established, and cases of sterility and menstrual disorder are in consequence becoming more amenable to treatment (*cf.* L. Blanchard).]



The adrenal bodies are also enlarged in pregnant women. Leschke has demonstrated that thyroid changes always accompany functional changes in the ovarian apparatus (puberty, sexual intercourse, pregnancy, childbirth and the change of life). These sexual crises are also often the signal for the onset of Graves' disease, and in dissecting specimens of such cases we find the fairly constant symptom of ovarian atrophy, which manifests itself clinically in diminished or suppressed menstruation, in the exaggerated bone development and its osteomalacic accompaniments and in certain distinctive changes of the sex functions (Figs. 19 and 20). If the thyroid secretion is inadequate,

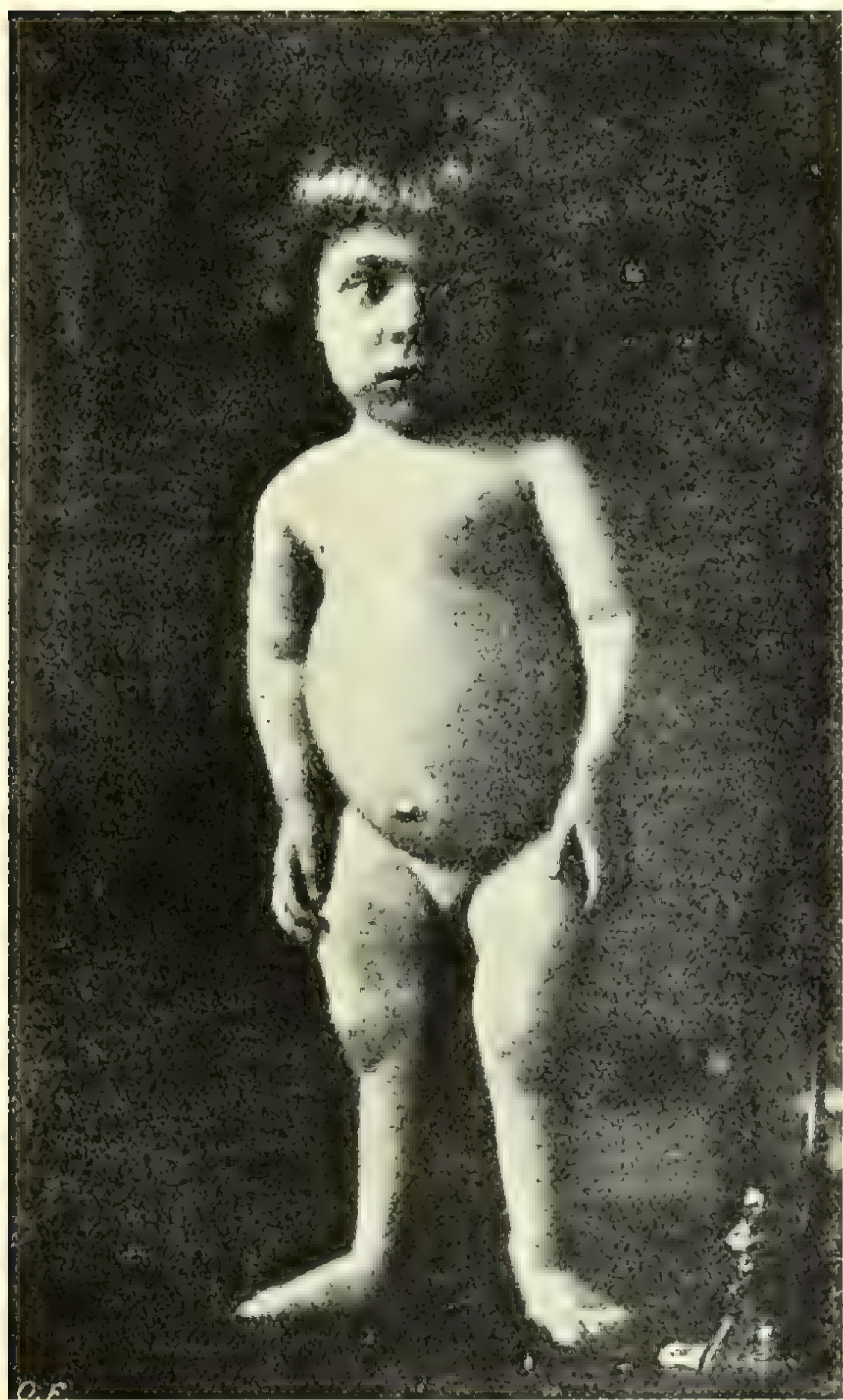


FIG. 19.—Rachitic dwarf, five years old and 73.5 cm. tall. (After Guggisberg.)

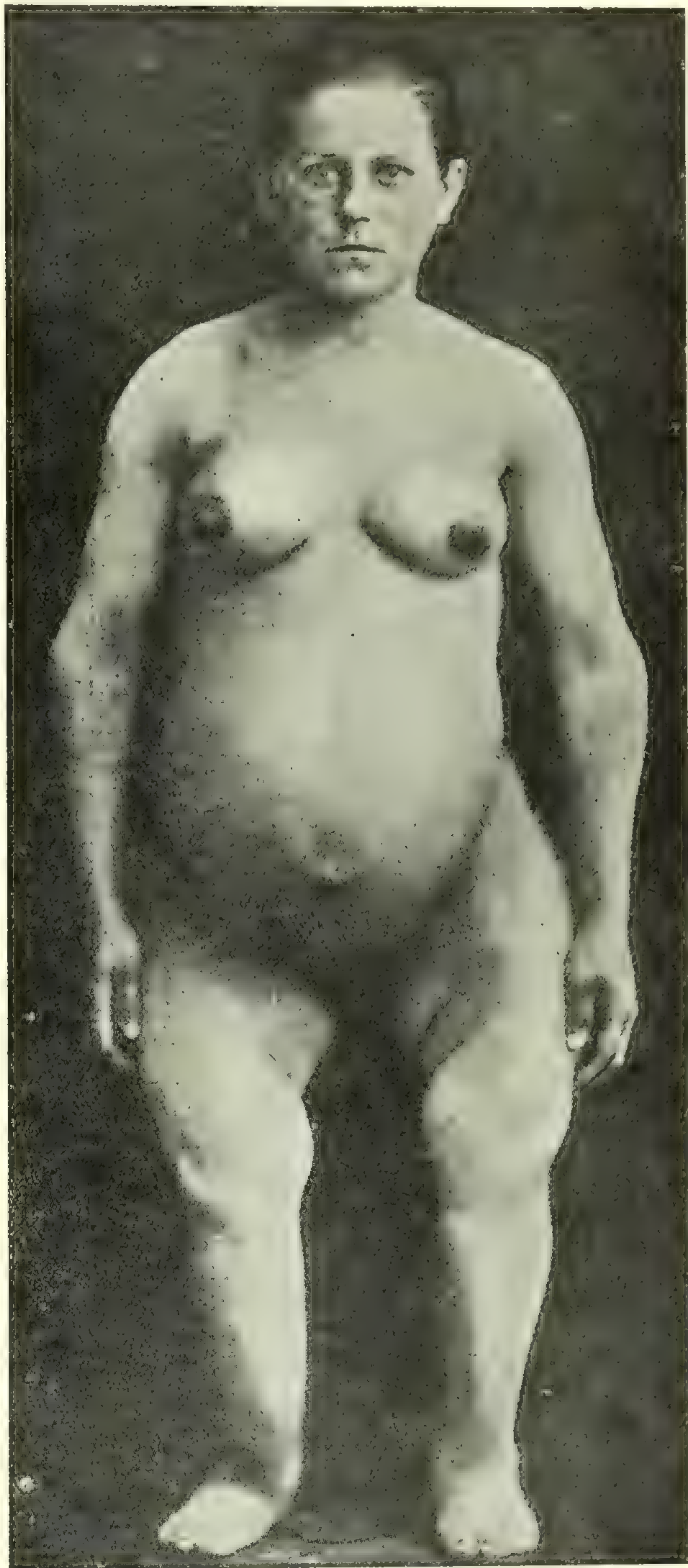


FIG. 20.—Case of extreme rachitis. (After Stratz.)

the resultant manifestations are confined to deficient growth of the body, particularly undevelopment of the sexual organs and lack of hair. Beside the thyroid gland are situated certain extremely small glandular bodies (generally four), which



are known as the *parathyroids* (Fig. 21). It is specially significant that these parathyroids are adjacent to the thyroid, or even inside it, in the bodies of carnivora, but separated from it in herbivora.

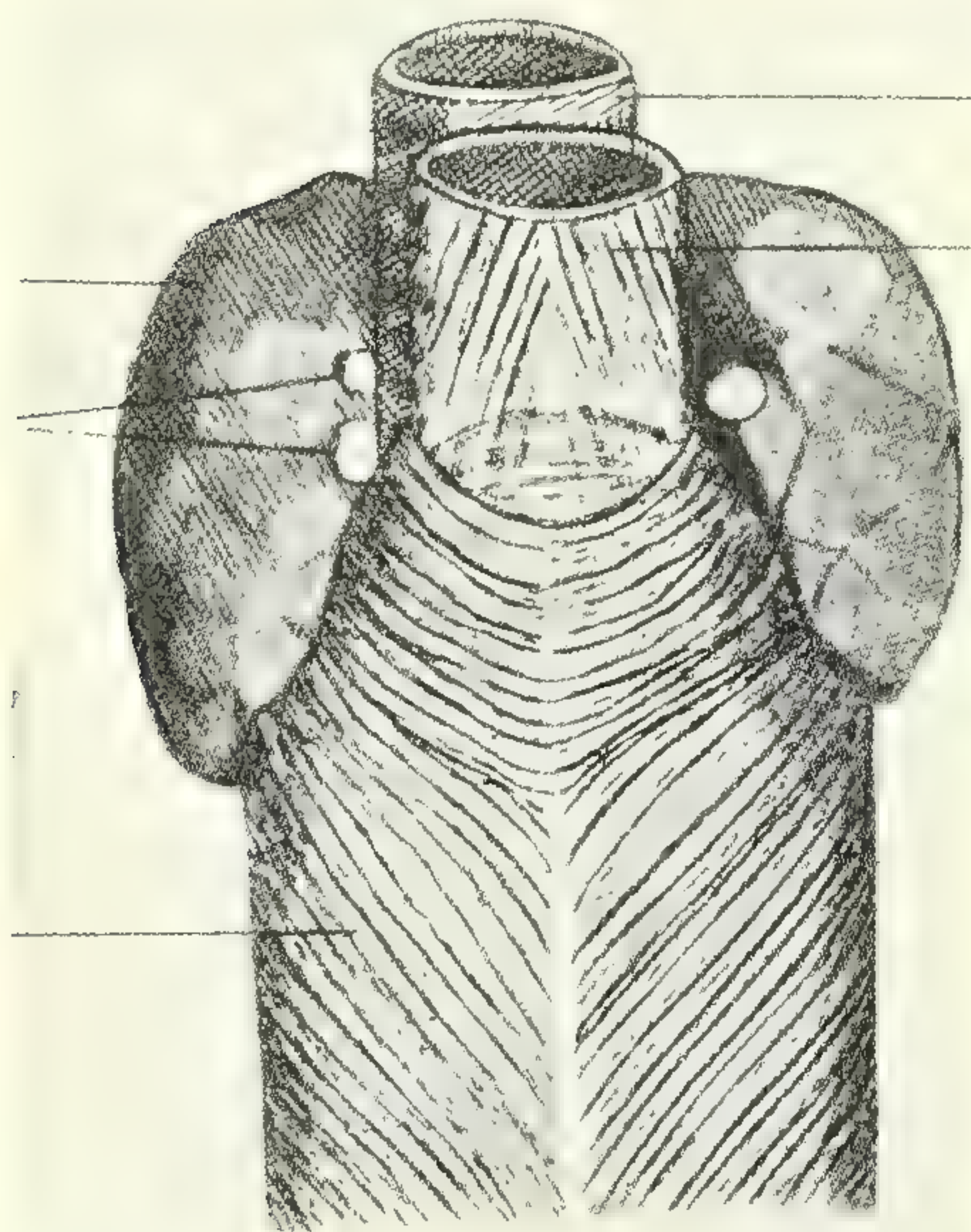


FIG. 21.—Accessory thyroid glands.  
(After Merkel.)

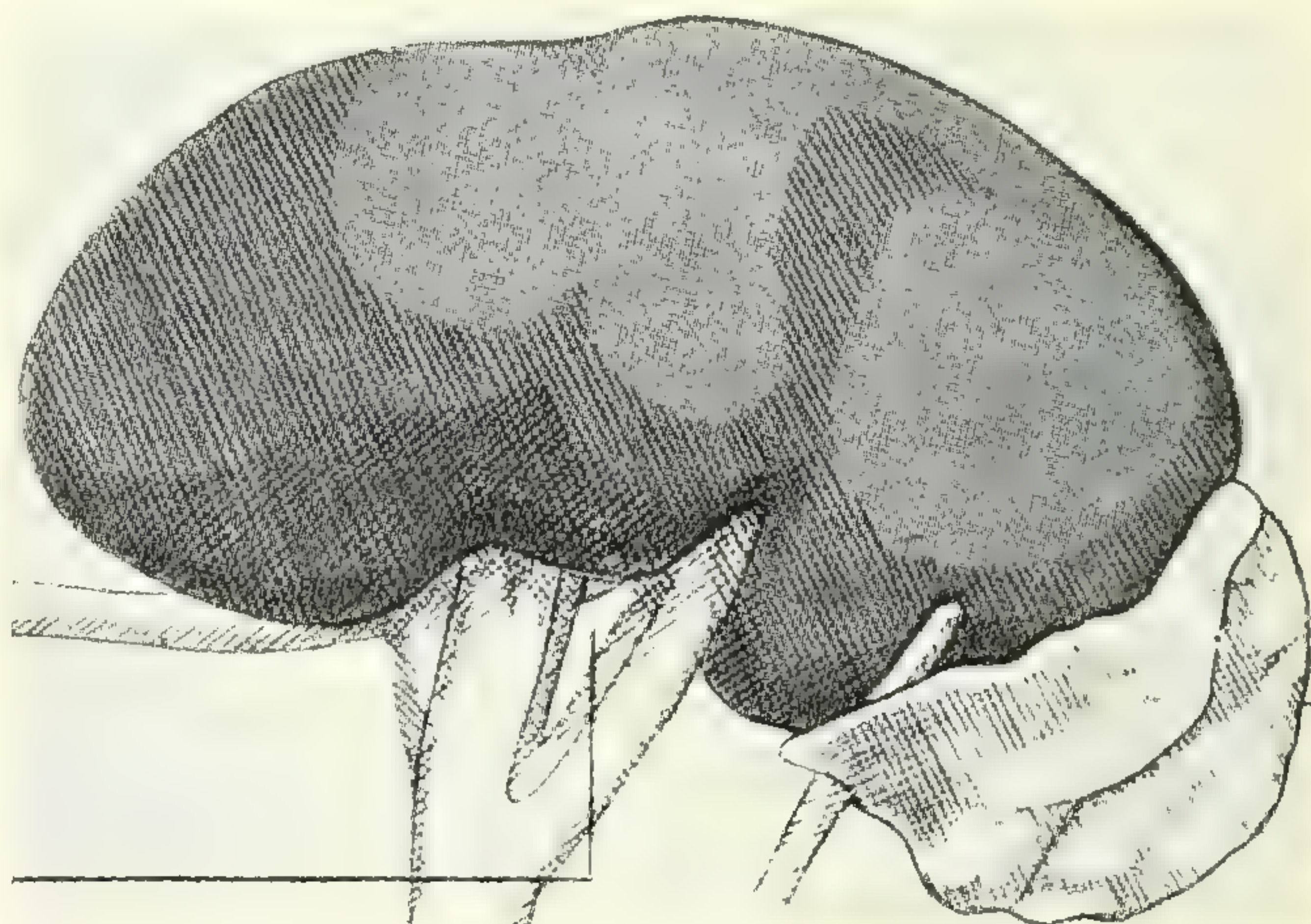
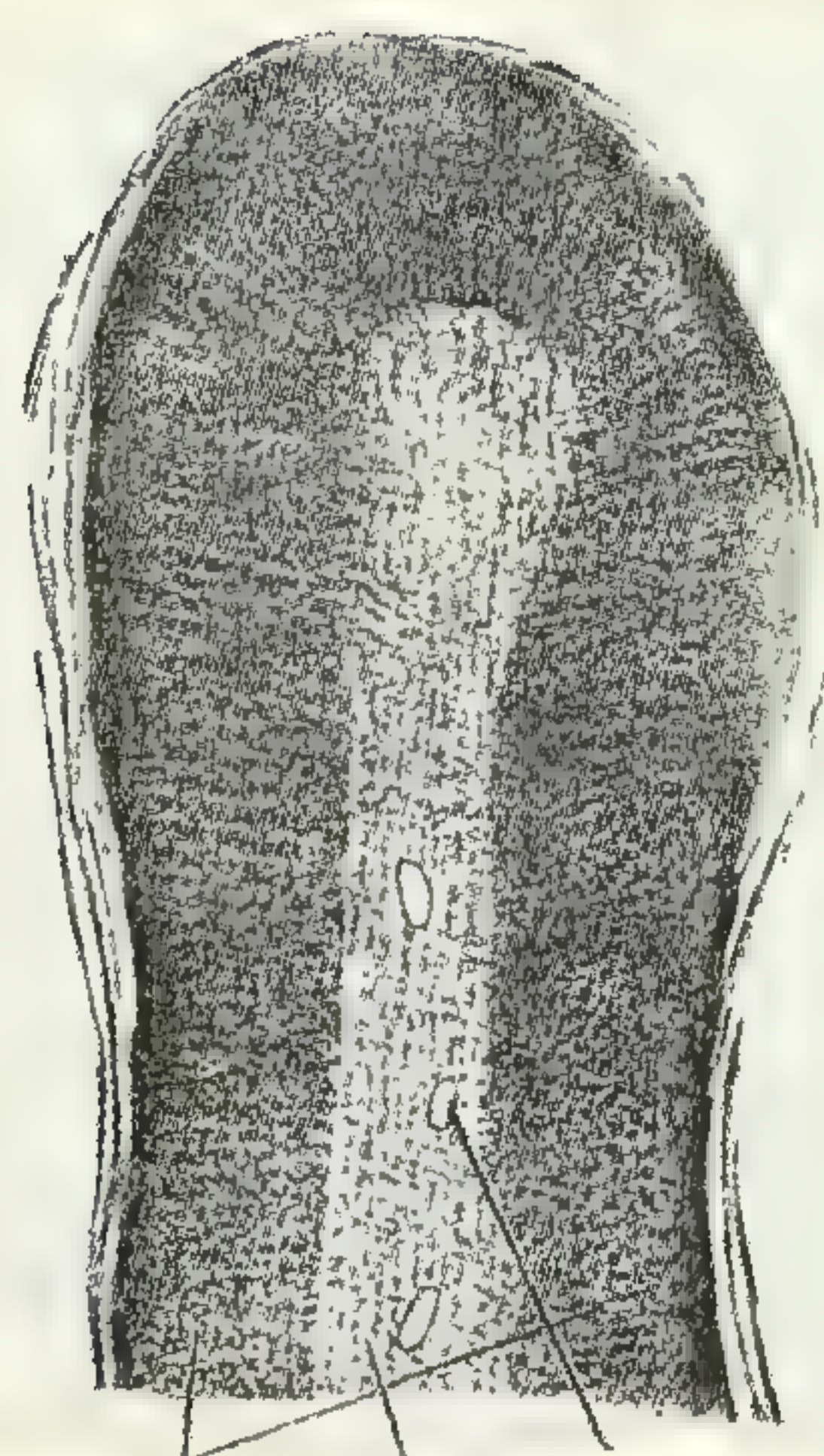


FIG. 22.—Kidney with suprarenal gland. (After Merkel.)



Cortex Medulla Blood  
vessels

FIG. 23A.—Section of the  
suprarenal gland of a child.

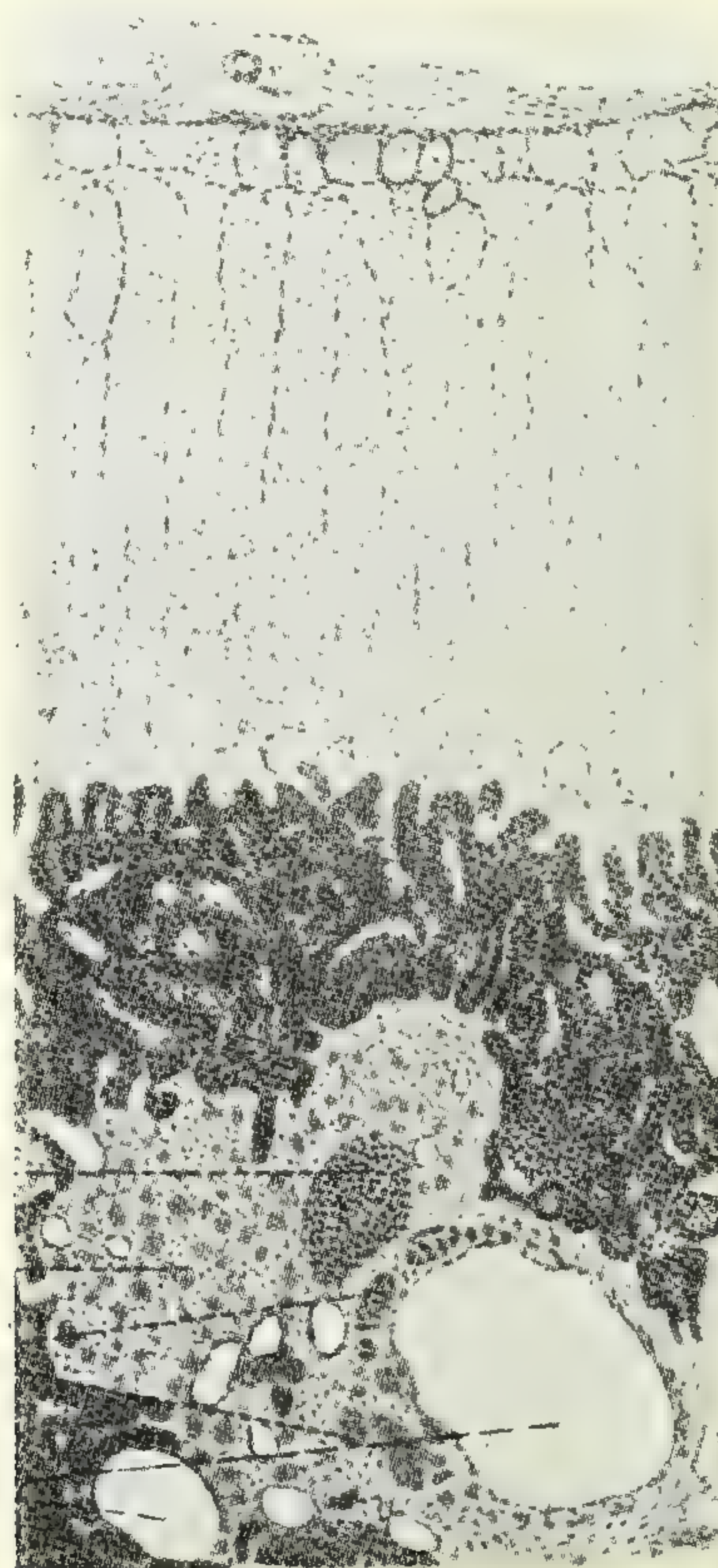


FIG. 23B.—Section through  
suprarenal gland.

They develop out of the epithelia of the dorsal aspects of the third and fourth gill-clefts, and, in human beings, they are about 3–15 mm. long and 2–4 mm. wide. If they are not present in the organism, or if they do not perform their office, tetanic



convulsions ensue, followed by death. Similar convulsive symptoms may not only sometimes be noted in the menstrual periods, but may appear spontaneously during pregnancy and lactation. During pregnancy they may be accentuated to the point of premature expulsion of the foetus. Another fact of significance is that the parathyroid secretion also seems to affect the new-born child and to cause convulsions in some cases.

The parathyroids produce an internal secretion, "parathormone" (Collip), which controls the calcium metabolism of the body. Hyposecretion causes tetany and defects in the dental enamel. Hypersecretion causes diminution in the calcium of the skeleton, and osteitis fibrosa. In hyposecretion there is great diminution in the calcium content of the blood. In hypersecretion there is excessive calcium in the blood, with depletion of the lime and phosphorus in the skeleton and softening of bone in consequence.

One of the symptoms is an increase of ammonia and carbamic acid in the urine, which further contains free nucleic acid.

Leschke has shown that Koch found further substances in the urine of dogs affected by tetanus; such as methyl guanidine (and other guanidine compounds), histamine, choline and neurine: that is to say, toxic substances which had not been broken down.

The *Glandulæ suprarenales* (generally termed the adrenal bodies), Figs. 22, 23, and 24, are of the utmost importance in the endocrine system. They are in intimate relation to (without being functionally associated with) the kidneys, and consist of two separate glandular systems. Moreover, throughout the body there are minute portions of tissue resembling the suprarenal medullary substance: for instance, in the liver, the spleen or pancreas, in the male spermatic cord, along the course of the large veins of the abdomen, and of the sympathetic trunk, in the testes and the broad ligaments, the oviducts and ovaries. There are also certain glands whose structure resembles the suprarenals inasmuch as there are two different substances, cortical and medullary. These may be termed the true accessory adrenals (*Glandulæ suprarenales accessoriae*). All these glandular structures form the adrenal or chromaffin system. The specific central adrenal hormone has been isolated and is known as adrenalin, or epinephrine. Adrenalin has a significant and manifold value for the living organism, but it is essentially a stimulant, an energiser. It causes a contraction of the vascular system and thus increases the blood pressure. The symptoms of Addison's disease are relevant here: the cause is known to be

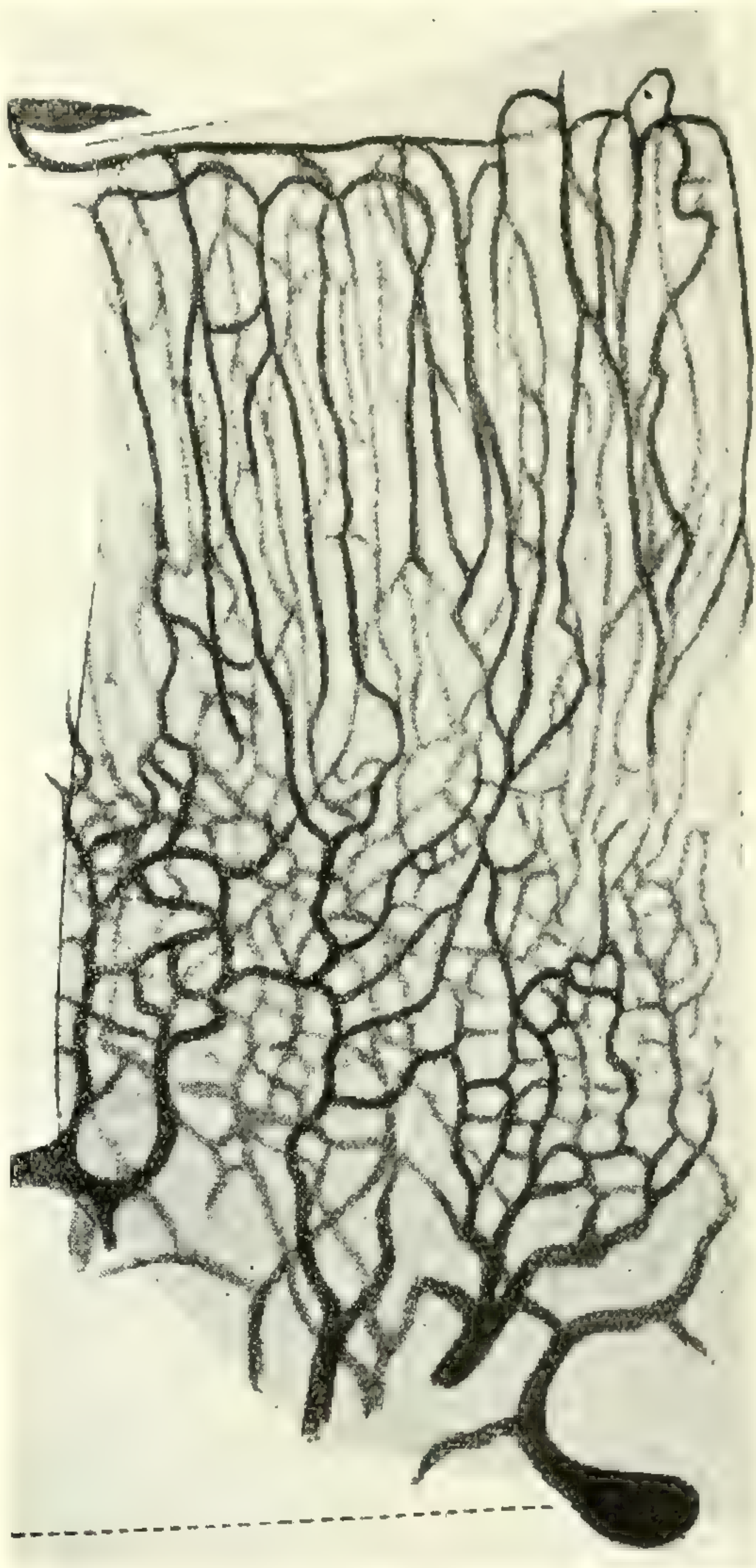


FIG. 24.—Section through the suprarenal gland of a child. Cortex above and medulla beneath. (After Stöhr.)



degeneration of the adrenal tissue, generally of tubercular origin. The blood pressure falls, there are nervous disturbances, anæmia and marasmus, and the skin becomes dirty in appearance, brown and spotted. The result is generally fatal.

It is possible to trace the presence of the *millionth fraction of a milligramme* of adrenalin. It has a tonic and stimulant effect on the uterus. Larger doses cause a strong flow of saliva and it is significant that increased salivary secretion is one of the accompaniments of sexual excitement in normal persons. Indeed, the adrenal system has extremely powerful influence and interactions genitally, as has been demonstrated by J. F. Meckel as long ago as 1806. A recent investigator, P. F. Richter, confirmed the paramount importance of the adrenal bodies in determining the essential female characteristics. The structure of the adrenal cellular tissue closely resembles that of the ovarian corpus luteum. The cortical portion of the adrenal body seems specially important in this respect.



FIG. 25.—Bearded European woman.  
(After Ecker.)



FIG. 26.—Mrs. Taylor, born in 1832  
in Lincoln, U.S.A. (After Moll.)

[It had long been known that the cortex was indispensable to health, and that it probably produced a hormone which could be isolated. Although complete chemical identification has not yet been achieved the hormone (*cortin*) is now being examined, and its effects are being tested both in men and animals. It has proved of considerable value in cases of Addison's disease.]

In cases of tumours of the suprarenal cortex which involve hypertrophy of local tissue, there is degeneration of the uterus and the menses stop. There is an increase of hair on the face and body, approaching the masculine type. In young girls the sexual organs develop before their time, for the ovaries dominate; but, in elderly women whose ovaries have atrophied, the adrenal bodies continue to function and there is a remarkable hirsute development; the bearded women (Figs. 25 and 26) of museums and circuses owe their anomaly to disturbance of the suprarenal glands.

After castration there is a hypertrophy of the suprarenal cortex; the same occurs in pseudo-hermaphroditism and in *pubertas præcox*. Here, too, there is a strong growth of hair and often excessive fat. In women there may be a tendency towards the masculine type in physique, hair growth (*hirsutismus*) and voice. The



converse effect is produced by the injection of ovarian secretion into normal persons ; there is an increase of the suprarenal cortex and this corresponds to certain phenomena of pregnancy and of rut in male animals ; *i.e.*, strong pigmentation and growth of hair.

The degeneration and atrophy of the cortex (*hypoplasia*) produces the same symptoms as that of the anterior pituitary lobe (see above) : premature senescence, baldness, loss of fat and flesh, etc. These symptoms constitute what is termed by Charcot, *geromorphism*, and by Variot, *senile nanism*. If the suprarenal cortex is destroyed, death ensues.

Leupold proved that there is a remarkable correspondence between the weight of testes and suprarenal bodies. In 52 out of 100 cases he showed the ratio to be 2.5-1. Further, he found that while the thymus gland is still demonstrable, the adrenal bodies weigh very little, but that, during puberty, the adrenals grow rapidly in weight, while the actual gonads develop more slowly, but for a longer period of time. It has been suggested that the adrenal bodies activate the involution or atrophy of the thymus and thus clear the way for the functions of the sexual organs.

[The interrelation of the ovaries and the suprarenal glands is now becoming more and more evident, and the study of cortical tumours and disturbances generally has tended towards the view that the adrenal cortex is intimately associated with male attributes since, in the case of women, the changes observable are nearly always in the direction of virilism. Collett reports a case in which a girl, only 1½ years old, exhibited hair about the genitals, the labia and furrowed clitoris being well developed. Hair was also to be observed on the face, and the vocal cords were large. After removal of a tumour these appearances receded although hair again began to grow around the vulva two years later. Further advance in our knowledge is certain now that extracts are being prepared.]

The last-named glands (or gonads) are particularly important ; they have (at least) double purposes in either sex. They are glands of reproduction, in which capacity we have already briefly described them. They are also glands of internal secretion. It is still a matter of dispute as to which special portion of the gonadal tissues secretes hormones.

The initial experiments were made by Nussbaum several years ago. He removed the testes of male frogs, which then ceased to develop the pads or protuberances on the fore feet with which they normally grasp and hold their mate during copulation. These pads develop in the breeding season. Thus it was experimentally indicated that certain elements derived from the testes promoted the formation of male accessory organs and characteristics : in other words, that the testes had an endocrine secretion. Steinach continued this series of experiments by injections of testicular secretions from male frogs in heat into the bodies of castrated males of the same species. The castrates, before injection, had no urge to copulate and no special organs on their feet. A few hours after injection they became genitally active.

Up to that time the view was held by many men of science that sexual processes were a function of the nervous system. In how far was this view still tenable ? How far were nerves affected as well as glands ? It was already certain that the copulatory reflex of male frogs could be set in motion by mechanical stimuli. Could secretions of specific kind also affect the central nervous system ? Steinach injected his castrated frogs afresh but with a preparation from the spinal and cerebral substance of male frogs in heat. And the same copulatory reflexes duly appeared. But, when spinal and cerebral preparations from male frogs in a sexually quiescent state were injected there was no response.



It was clearly demonstrated that the secretion of the testes had a special chemico-erotic effect on the nervous system of normal male creatures.

Steinach carried his experiments a step nearer the human organism. He removed the testes of very young rats between three and six weeks old. All the typical qualities of the male animal remained in abeyance, *i.e.*, they remained immature. But, if testes were grafted into the bodies of these castrates (and not necessarily in their normal position) the distinctive male qualities developed, if and when the grafts healed and were functionally assimilated. Therefore he concluded that the testicular secretions determine not only the activity of the male sexual impulse, but also the male secondary characteristics. And it was specially illuminating to observe that in the testicular grafts the seminiferous tubules in which the sperms are generated became atrophied and disappeared, but the interstitial cell tissue thrived and grew.\*

The corresponding series of experiments on female rats included the removal and regrafting of ovarian tissues. The results were substantially in harmony with those obtained on the males. Ovarian excision inhibited the development of female characteristics and the activity of the female sexual functions, and successful ovarian regrafting restored both to normality. But the functions of the ovary are evidently more intricate in certain ways than those of the male gonads.

It is probable that there are other contributory portions of the testes as well as the interstitial cells, but their effects seem virtually the same (see Bouin and Benoit). The ovarian secretions have evidently greater variety, and it cannot be maintained that Steinach's term "gland of puberty" or "puberal gland" is happily chosen or often accurately understood. Of late, many have even disputed the endocrine activity of the interstitial cells. Following an earlier study by Kyrle—who maintained that they were purely trophic or nutritive—these opponents of Steinach either deny that the gonads are endocrines or consider them only secondarily and dependently active, in this sense. But, so long as they cannot produce more positive results, we have no reason to reject the other theory.

Continuing his investigations, Steinach proceeded to try to show that orchitic (or testicular) and ovarian secretions were essentially different; that these essential essences of maleness and femaleness influenced the whole organism. Otherwise they might well be interchangeable and grafted ovaries need not affect the normal development of male creatures. But, if such grafts were followed by anomalies of feminine type, then the ovarian secretions must be held responsible. *Vice versa*, female animals might be masculinised by orchitic grafts. Steinach in Vienna, Brandes in Dresden and Sand in Copenhagen, as well as other investigators, have tried to prove these facts. Young rats, guinea pigs and fawns were castrated and their testicles were sewn under the skin of females of their species. In about half the cases the grafts had healed successfully by the end of a fortnight and the results were as might have been expected. The males who had been grafted with ovarian tissues showed no further normal genital development: their scrotal organs remained of infantile size and shape—in fact, they were even less normal than castrated creatures. The typical breadth and thickness of the head and shoulders, characteristic of male mammals, did not appear: their heads and forequarters remained comparatively small and narrow; the thorax, instead of expanding, was also narrower than in normal or adult castrated males. When they were X-rayed the bony formation was found to be quite feminine. The thick, coarse body hair,

\* These interstitial cells are groups of cells between the seminiferous tubules of the testes. They are also known as Leydig's cells (*cf.* Kohn).



characteristic of males, was replaced by a softer and shorter coat. And the milk glands grew and became normally female, even under the microscope. They secreted a normal milk, full of fatty substance. As Steinach said: "If young guinea pigs are put close to these feminised adults the infant creatures at once recognise that they can give suck, and they nuzzle up to them. The feminised adults cherish the suckling young, give of their milk and show an evident satisfaction, attention and patience in the exercise of this complex function, equal to that of normal suckling mothers. The determinant deflecting power of the female puberal glands has made males into tender mothers and milk givers." Moreover, these feminised adults were no longer male in their sexual impulse; they showed no interest in females of their species but received the attentions of the normal males who approached and copulated with them. The conclusion is that the ovaries secrete a substance which not only inhibits but reverses normal male development. The virilised doe rabbits and guinea pigs showed a masculine trend. Their mammary glands, uteri and exterior genitals did not develop normally; in some cases they even regressed. Their softer and shorter fur was replaced by long, coarse hair and their skulls and shoulders broadened and thickened: sometimes they exceeded the normal males in these dimensions. Their sexual instinct became male in its direction; they sought out the normal females and were at once able to detect whether or not the objects of their attention were ready to receive them. "As soon as they detected a normal female in œstrus they followed her incessantly, with demonstrations of courtship and attempts at pairing. Towards normal males they showed rivalry and indifference."

The Dresden zoologist, Professor Brandes, corroborates Steinach's results. He says:

"I have myself seen these feminised males in Steinach's laboratory. I was able to assure myself, by careful inspection of the external genitals—though these showed traces of atrophy—that the most characteristic feminine qualities were combined with a male body."

Brandes himself extended the experimental tests to deer.

"We have removed the testicles of a young male and grafted them into the lower abdomen of a doe, whose ovaries were grafted into his body. Both animals were, of course, very young. Both are reacting to the grafts already. The former doe has clearly recognisable rudiments of horns and the Adam's apple in the throat which is distinctively male; and it is beginning the characteristic jumping and springing movements of male deer. The feminised male shows no sign of either horns or Adam's apple, but has mammary glands, which normally appear only after the young are conceived."

*There can, therefore, be little doubt that both the secondary sexual characteristics and the direction of sexual urge and emotion are dependent on substances produced by the gonads, and that these gonads produce substances of opposite nature; so that the male gonad or testicle activates the development of male characteristics and directs the urge towards the female, and that the female gonad or ovary operates in the contrary manner. It is not of much importance whether the interstitial cells, or other portions of the gonadic tissue manufacture these essential substances.*

As Brandes remarks:

"The careful inspection of the glandular grafts, which had healed in their new site showed that both the spermatozoa with their tubules and the ova were quite atrophied, but that the connective tissue thrived, and that there was a special proliferation of Leydig's cells (in the male organ) and lutein cells (in the female). We cannot, therefore, attribute the endocrine



secretions to the reproductive cells, but must consider the proliferating interstitial tissue responsible."

[For many years the nature and source of the testis hormone have received attention, but it is only with recent years that experimental work has made real progress. It is known that one hormone is very powerful, and it would appear from recent work that a second hormone is produced having some relation to the pituitary. The source of these hormones is still debated, but it would seem probable that both the interstitial cells and the germinal tissues share in the work of production. The work of Steinach, supported by Brandes (whose experiments were badly reported), gave rise to extravagant hypotheses which are not fully justified. Nevertheless, research has shown the extreme potency of the male hormones, and their interaction with the pituitary is being demonstrated.

In discussing the effects of gland grafting and the injection of hormones and extracts the subjective factors must never be neglected. Undoubtedly much exaggeration has existed and possibly even a certain degree of charlatanry. In view of certain results in animals, however, it would be hazardous to reject the whole of the experiments as due to fraud, mal-observation or suggestion. Nevertheless, the influence of the latter (whatever may be the precise mechanism at work) is enormous. It may be perceived even in the cases of such radical operations as castration. A recent instance was a man, who, castrated at 25, was capable of leading an active life and satisfying his wife, if we can credit the report. Examination showed few serious physical disabilities beyond the loss of the testes. Moreover, a recent report that an examination of 23 palace eunuchs in

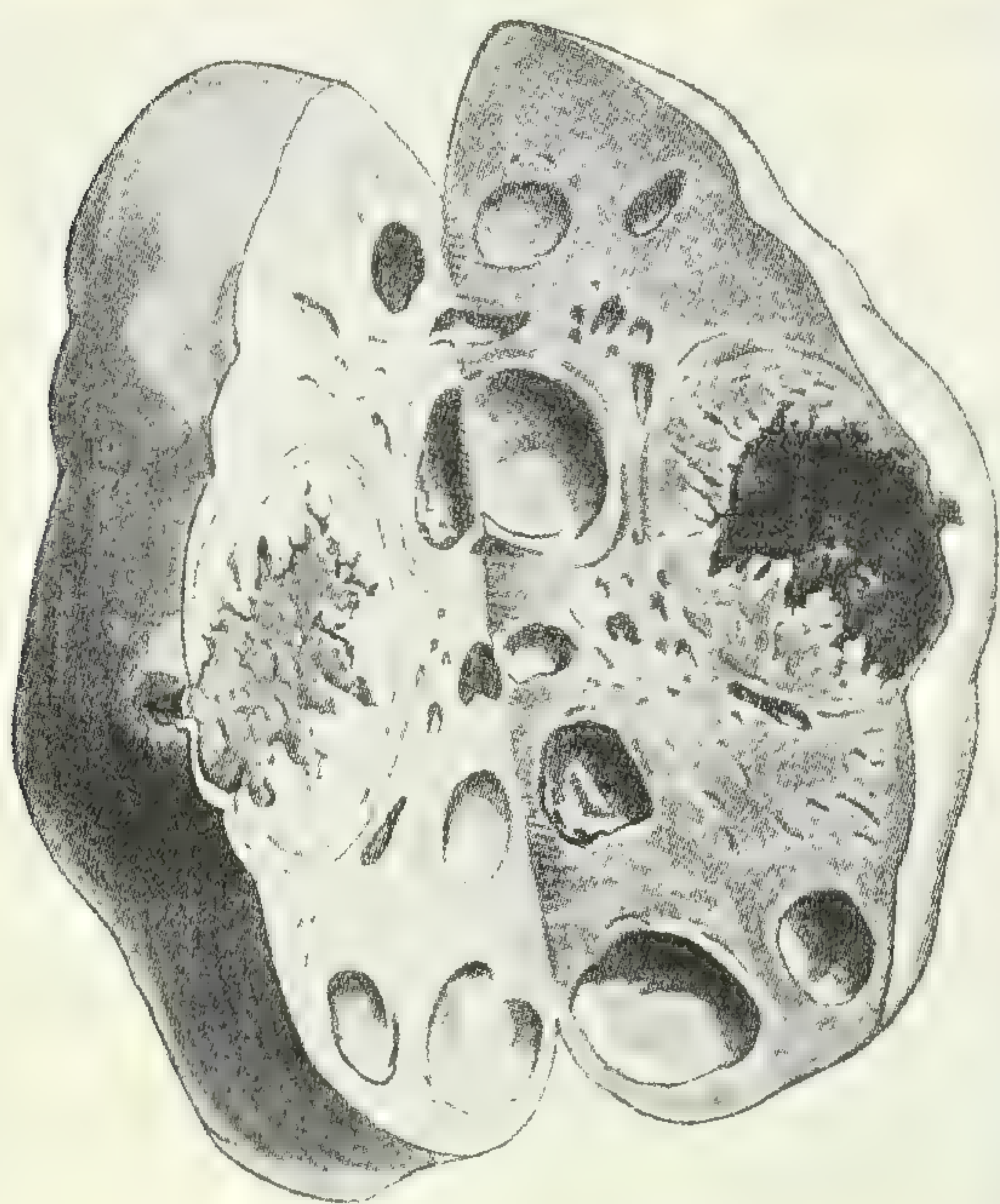


FIG. 27.—Ovary of a healthy 19-year-old girl: section showing corpus luteum at menstruation. (After Kollmann.)

China revealed the fact that 10 were suffering from gonorrhœa indicates that caution is suggested. (Cf. Rowe and Lawrence: McCartney. For plates illustrating the genitals of Peking eunuchs, see Matignon.)]

We must now consider the special female gonad or ovary. An ovary is depicted in Fig. 27. We have already given a brief description of the structure of these organs and the formation of ova. But what portions of the ovaries secrete the female hormones? And are other tissues or organs also active in this sense? Present-day biology attributes the ovarian hormones to the interstitial cells, follicles (Figs. 28, 29A, 29B, 30) and corpus luteum, which develop rhythmically as the follicles rupture. (Bucura, 1913, Sand, 1918.) There are also apparently endocrine qualities in the ovule after ovulation, the myometrial gland, the placenta, and even the actual embryo, and these probabilities do not exclude other possible sources of hormonal supply. We must distinguish between the *corpus luteum* (Fig. 31) of



pregnancy (*corpus luteum graviditatis*) and what has been called the spurious corpus luteum, which develops and disperses concurrently with an unfertilised ovum, which passes out of the body.\* The corpus luteum can obviously bear no part in the actual physical evolution of the female organs; and Biedl correctly states that the anatomical structure of the uterus is not due to the corpus luteum but to the interstitial tissue. And, indeed, as we shall show, the corpus luteum is essentially preparatory and accessory to reproduction. In order to make this clear we must define the processes of ovulation and menstruation (Figs. 27 and 30).

The life of woman has three main physiological stages: the pre-puberal, in which the general and genital organism is undeveloped; the adult, or sexually mature, which begins with puberty and continues till the climacteric, and

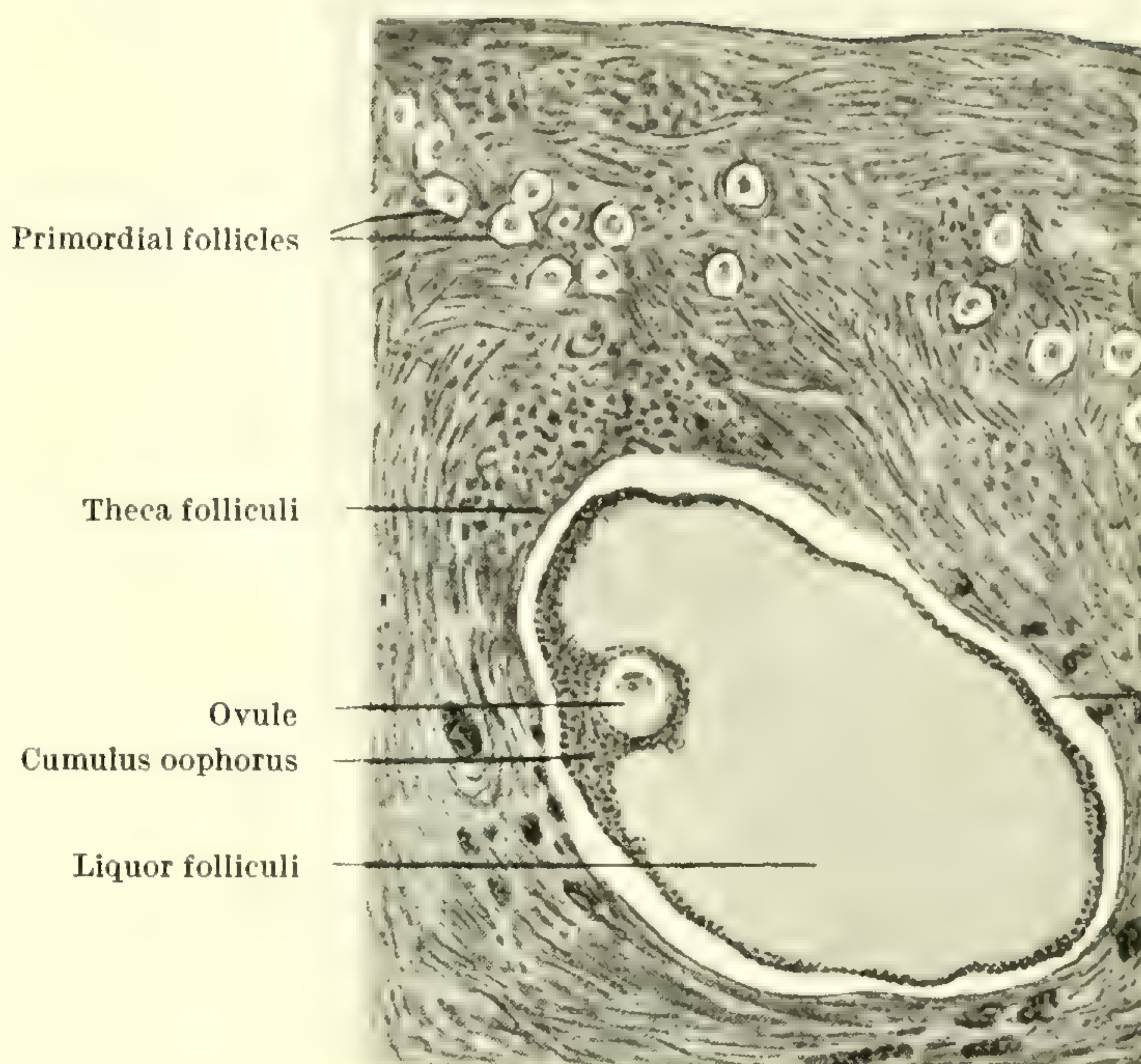


FIG. 28.—Follicle from the ovary of a seven-year-old girl.

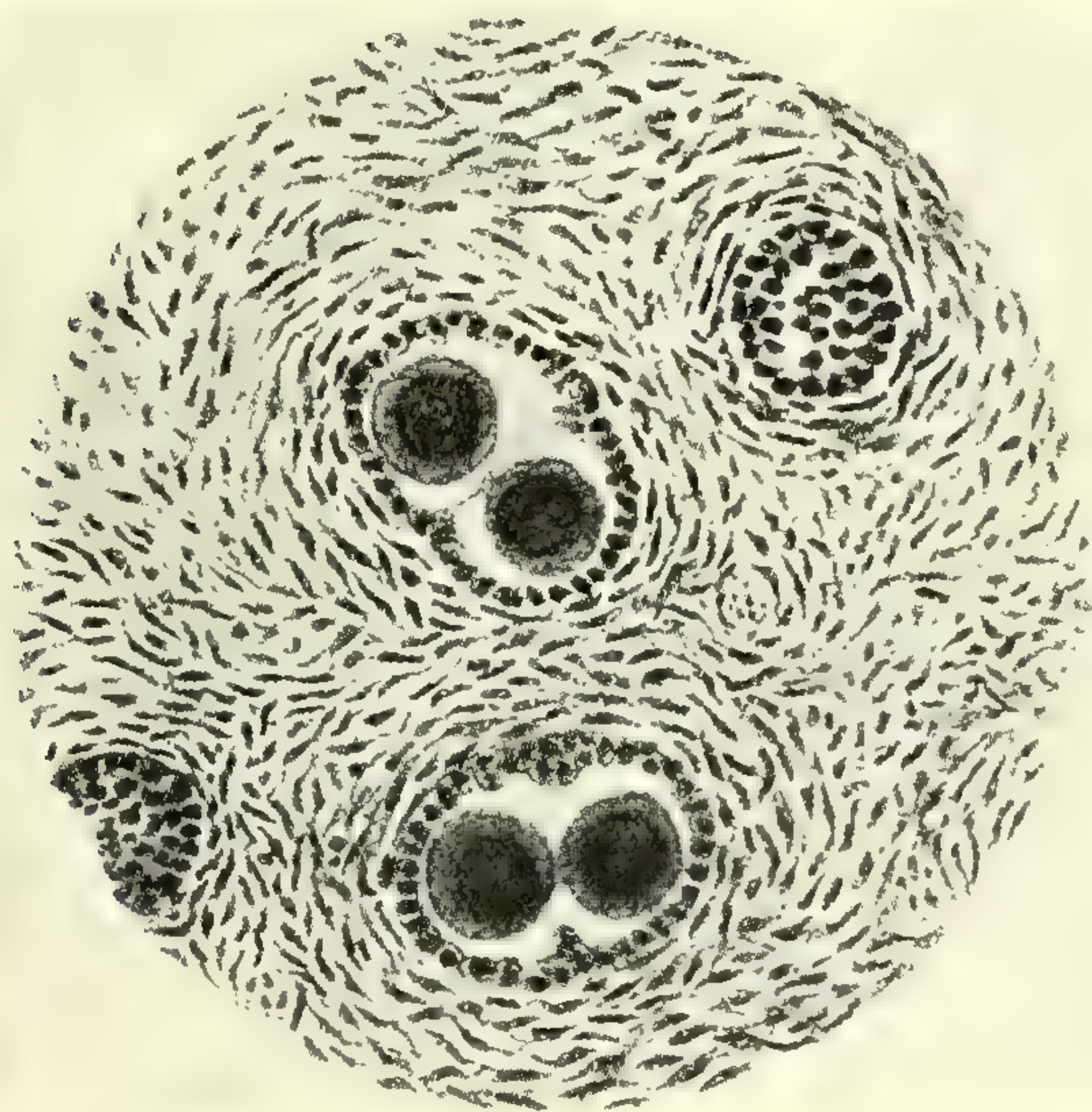


FIG. 29A.—Primordial follicles containing two ova about to divide into follicles containing one. From the ovary of a 34-year-old woman. (After Lindemann.)

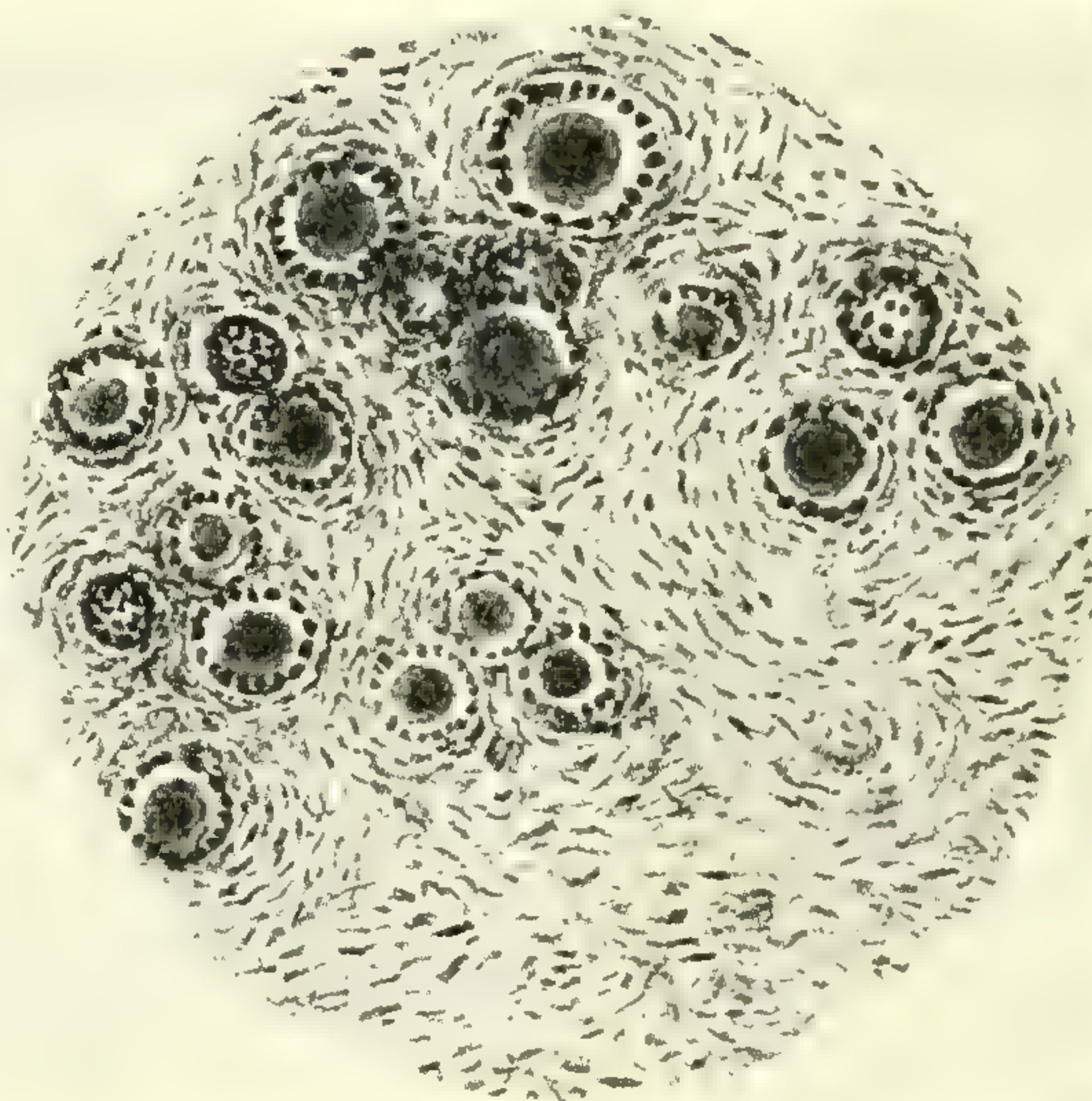


FIG. 29B.—Primordial follicles from the ovary of a 25-year-old woman.

the final stage of physical and genital repose. Sexual maturity begins, as a rule, in temperate climates between 13 and 14 years of age; in southern lands, 11, 10 or even earlier, and in northern lands much later.\* Its functional sign is menstruation, which

\* [This is not now generally accepted.]



normally recurs till the climacteric, at average intervals of four weeks. The average age for the climacteric is from 45–50 among women living in temperate climates. These changes must obviously be accompanied by alterations in the activity of the endocrine glands or the amount of endocrine secretions. Thus, menstruation has normally certain recurrent symptoms : increased secretion of saliva, loss of appetite, or, on the other hand, sharp hunger, with tendency to diarrhoea, moods of depression or elation and excitability and swelling of the breasts. In singers, also, there is generally a marked alteration in vocal range and even quality. All these symptoms are more or less normal, and there are others of a pathological nature in some cases. During menstruation there is a loss of between 100–200 c.c. of dark red blood, mixed with cervical mucus, which is expelled from the os uteri through the vagina. In the course of each four-weekly cyclic interval between menstrual periods a ripe ovule is normally extruded from the ovary by the rupture of a Graafian follicle (Figs. 27 and 30), or occasionally two ovules, from two separate follicles : a process known as *ovulation*. The ovule may be fertilised and develop normally into a child,



FIG. 30.—Ovary of young woman with follicle ready to rupture.  
(After Kollmann.)

or remain unfertilised and pass away. In either case a series of phenomena result, of the utmost importance and corresponding to changes in the internal secretions. At the risk of anticipating the contents of some of our ensuing chapters we must consider them in some detail here, for during the decades of woman's sexual maturity there is an alternation of two cycles, or two possibilities. Sellheim describes this as *functional duality*, the duality of the fertilised or unfertilised ovum. If the ovum is fertilised, menstruation is replaced by pregnancy and birth.

The ovule is extruded from the ovarian follicle, whose rupture is the signal for the tendrils of the funnel-shaped mouth of the oviduct to touch or clasp the ovary at the site of the follicle ; and the ovule which has been released with some impetus, is caught and drawn into the tube—as a sea anemone captures a water-flea in Liepmann's striking comparison. The ovule is carried along the oviduct by the capillary current and remains in the so-called *ampulla tubæ uterinæ* until the moment of fertilisation.\* If this is effected the fertilised ovum is further carried into the

\* [Recent work is inclined to emphasise the muscular theory rather than the ciliary theory of the transport of the ova. This point of view has been attained largely through the work of Corner and his colleagues in the United States.]



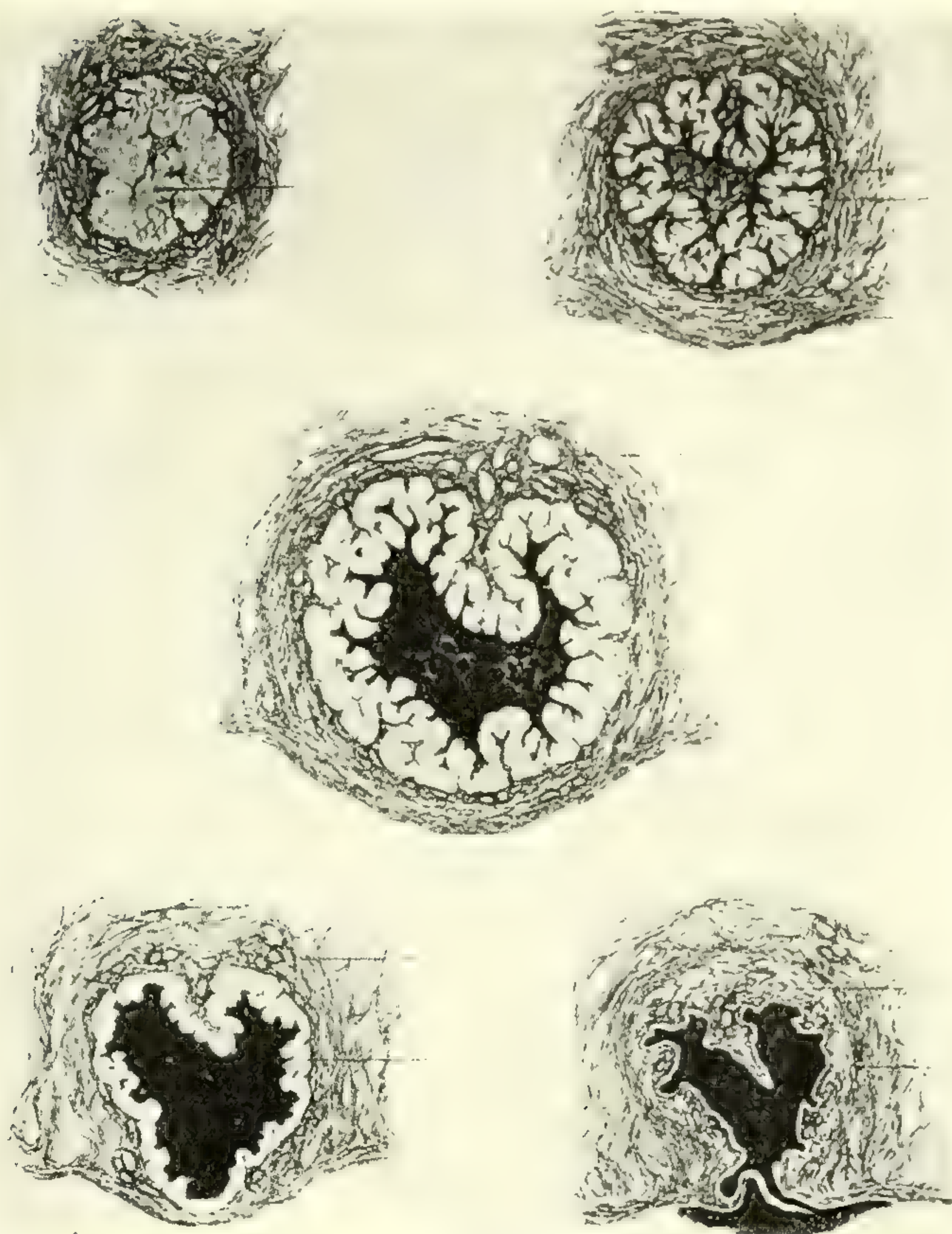


FIG. 31.—Development and involution of a corpus luteum spurium. [(After Bumm.)  
 (a) Newly-ruptured follicle; (b) Corpus luteum of 10 days; (c) Corpus luteum of 3 weeks; (d) Corpus luteum of 5 weeks; (e) Corpus luteum of 8 weeks.

womb, whose mucous membrane has been prepared for its reception, and is there implanted for further development. This is the initial functional stage of fertilisation or pregnancy.

If the ovum does not meet and receive the sperm cell, it passes out of the body

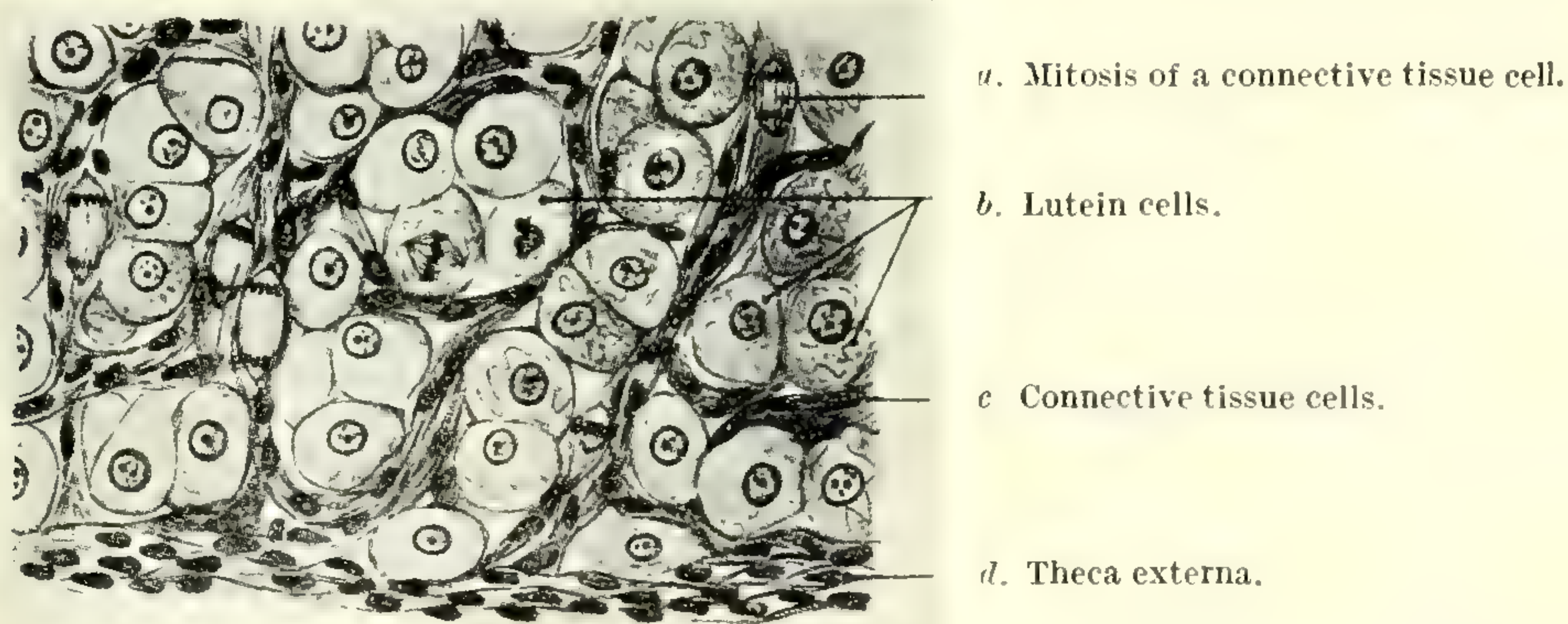


FIG. 32.—Part of a corpus luteum of a rabbit, 52 hours after copulation. (After Sobotta.)

together with the prepared uterine membrane, and this is *menstruation*, which might be termed the birth of an unfertilised ovum. The respective durations of the two cycles are the 10 months (of 28 days each) of pregnancy and the four weeks of



menstrual intervals. Von Spee calculates that the unfertilised ovule takes between seven and nine days to traverse the complete length of the oviduct, which is 12 c.c.

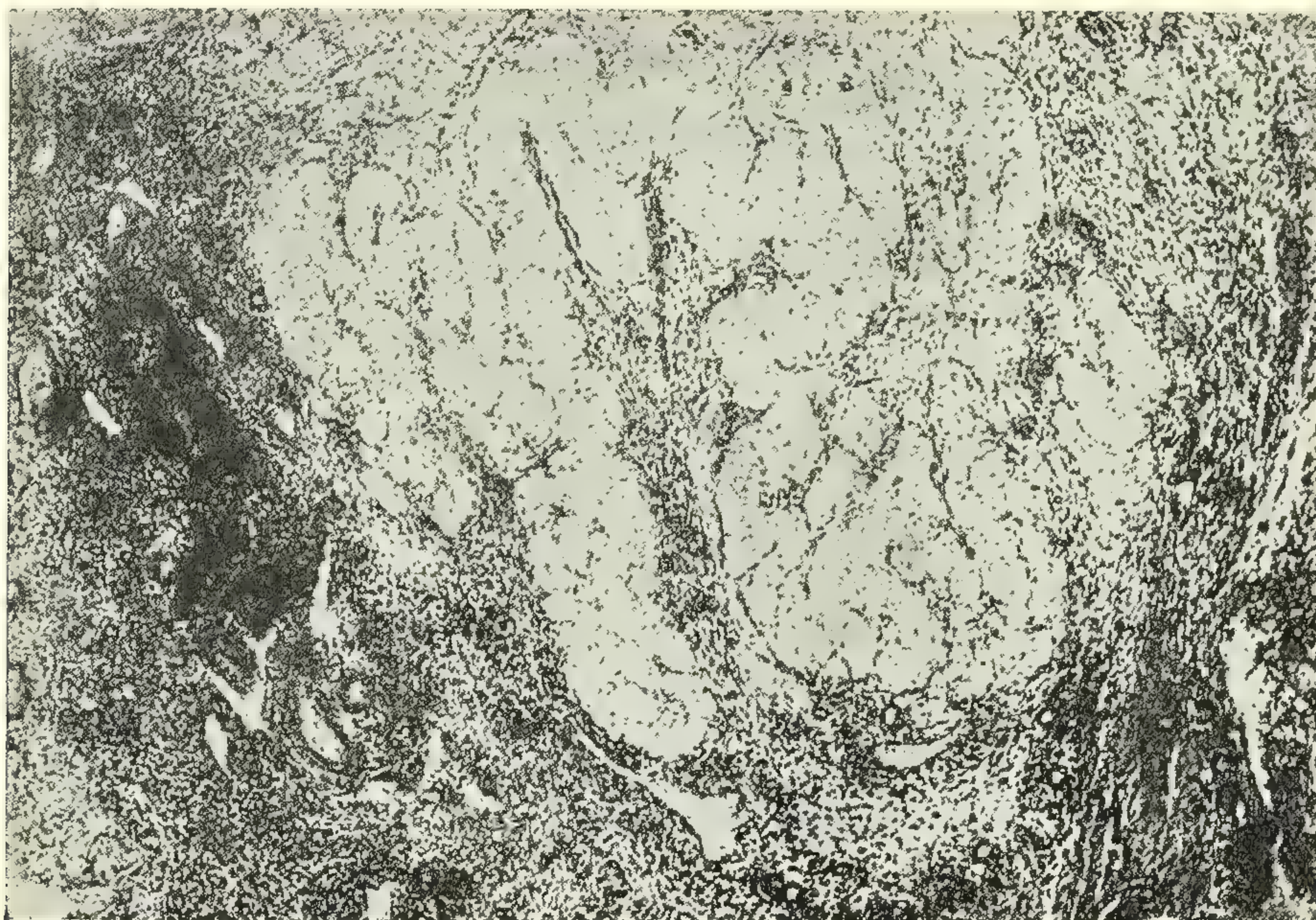


FIG. 33.—Corpus albicans under low magnification. (After Lindemann.)

What of the follicle meanwhile? Its *theca*, or connective sheath becomes full of blood and the *membrana granulosa* swells and *proliferates* (Fig. 27). It becomes

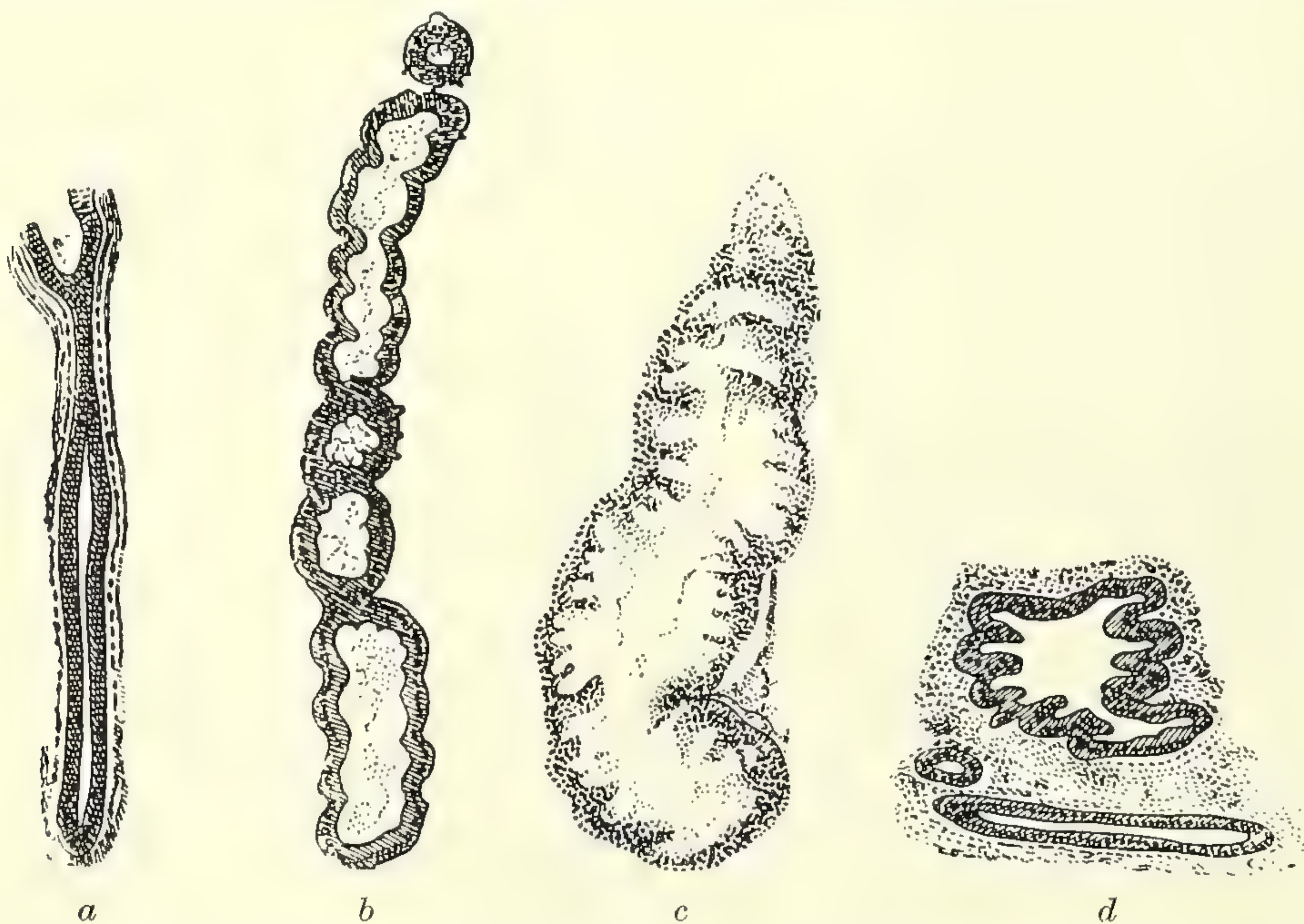


FIG. 34.—Changes in single uterine glands during the menstrual cycle. (a) Post-menstrual; (b) Interval; (c) Pre-natal; (d) Menstrual. (After Lindemann.)

full of blood clots and the cells show a distinct yellowish colour. The colouring matter, which is full of fatty substance, is termed lutein (Fig. 31). This yellow tint



appears distinctively associated with reproduction : it is present in the pollen of flowers and the yolk of eggs. The enlarged granulous cells become interlaced with very minute capillaries and thus a kind of gland is formed. This is termed the stage of *vascularisation* of the *corpus luteum*, or yellow body, which acts as a source of internal secretion and these processes appear to be determined by the ovule itself, which exudes subtle chemical substances which stimulate its parent follicle. If the ovum should miss fertilisation its fate is shared by its chemical exudations and by its follicle, which cannot maintain itself, but disperses (Fig. 31) and makes way for a fresh follicle. But, if fertilisation takes place more powerful chemical stimulants arise and the corpus luteum remains active throughout most of the months of pregnancy. It inhibits the growth of fresh follicles and, in a sense, protects the

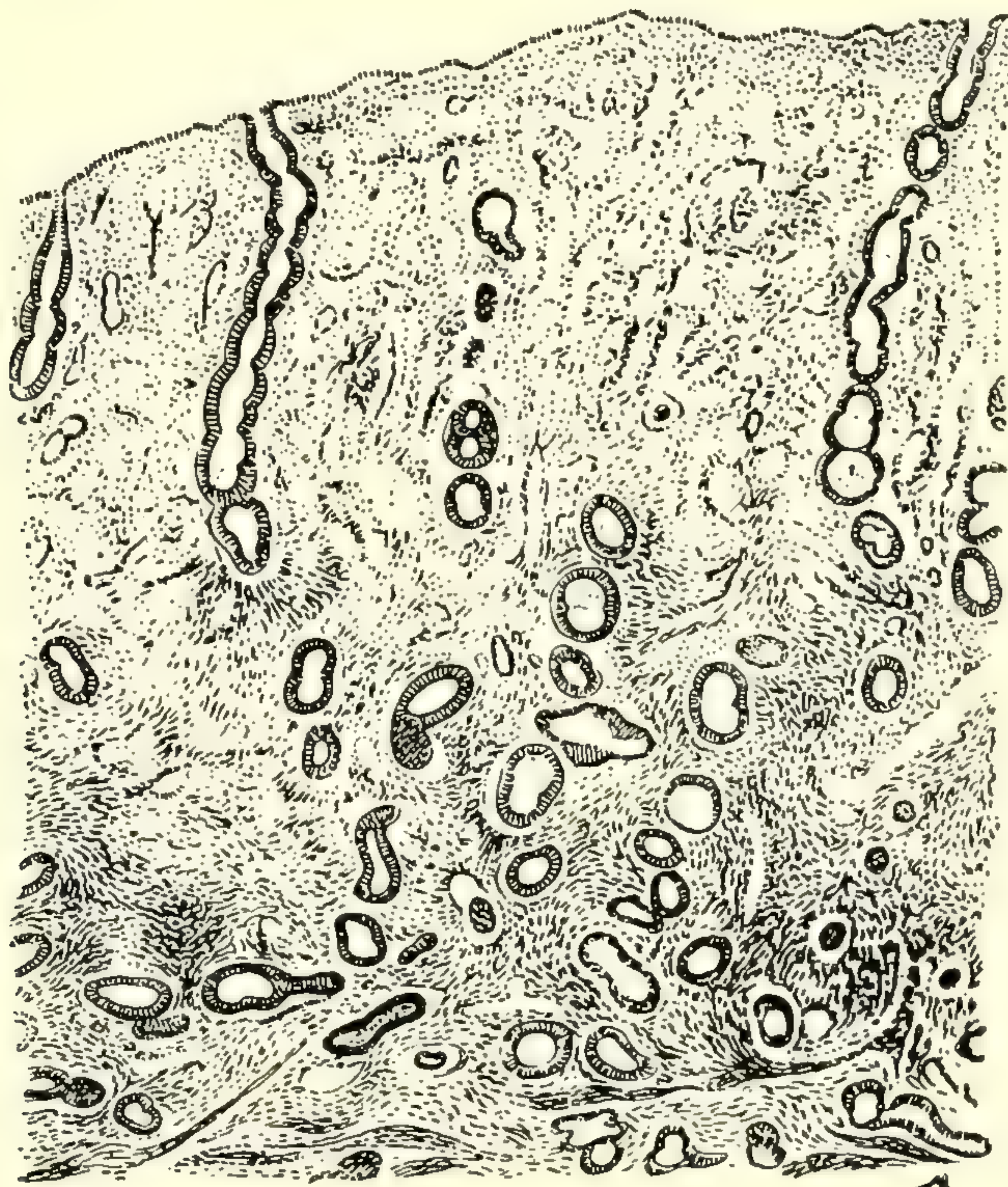


FIG. 35.—Interval phase. (After Lindemann.)

developing embryo. If the preservation and development of the embryo are assured the so-called *corpus luteum graviditatis* also degenerates and disperses, as Novak has graphically shown. The cells of the *membrana granulosa* are almost free from fatty substances but the theca lutein cells have minute fatty particles even before the follicles burst. Later, the characteristic colour fades and the *corpus albicans* (Fig. 33) appears, these processes occurring more rapidly in the so-called spurious corpus luteum.

With regard to menstruation. Let us take, firstly, the *latent* stage (termed so by Hitschmann and Adler), otherwise the *interval* (Schröder), and the stage of *proliferation*. The outer surface of the uterine mucous membrane is an epithelium composed of cylindrical cells. The glands of this mucous membrane are tubular and of equal thickness. After 14 days changes begin ; the tissues have already become moist and now the mucous membrane swells, expands and forms a compact outer—or upper—layer over a spongy base. The glands expand and the connective



tissue vanishes in the lower stratum more and more, but in the upper stratum it increases and its cells take a deciduous character. They become vascularised, and increase; their volume is almost trebled. This is the *pre-menstrual* stage, the phase of secretion (Fig. 36). Thus the mucous membrane of the uterus prepares to receive the fertilised ovum; it offers a "nest" for its adhesion and the establishment of gestation. If fertilisation fails, then this preparation is useless. The

mucous membranes break down and disperse; they are expelled together with the blood from the capillaries, in *menstruation* or *desquamation* (Fig. 37). The membrane returns to its normal or latent stage with cylindrical epithelial glands (*post-menstrual stage*, or *regeneration*) (Fig. 38).

The further question now arises as to the relation between *Ovulation* and *Men-*



FIG. 36.—Mucous membrane of a menstruating uterus. Through desquamation of the epithelium the sub-epithelial hæmatomata are emptied, the blood being discharged. (After Lindemann.)

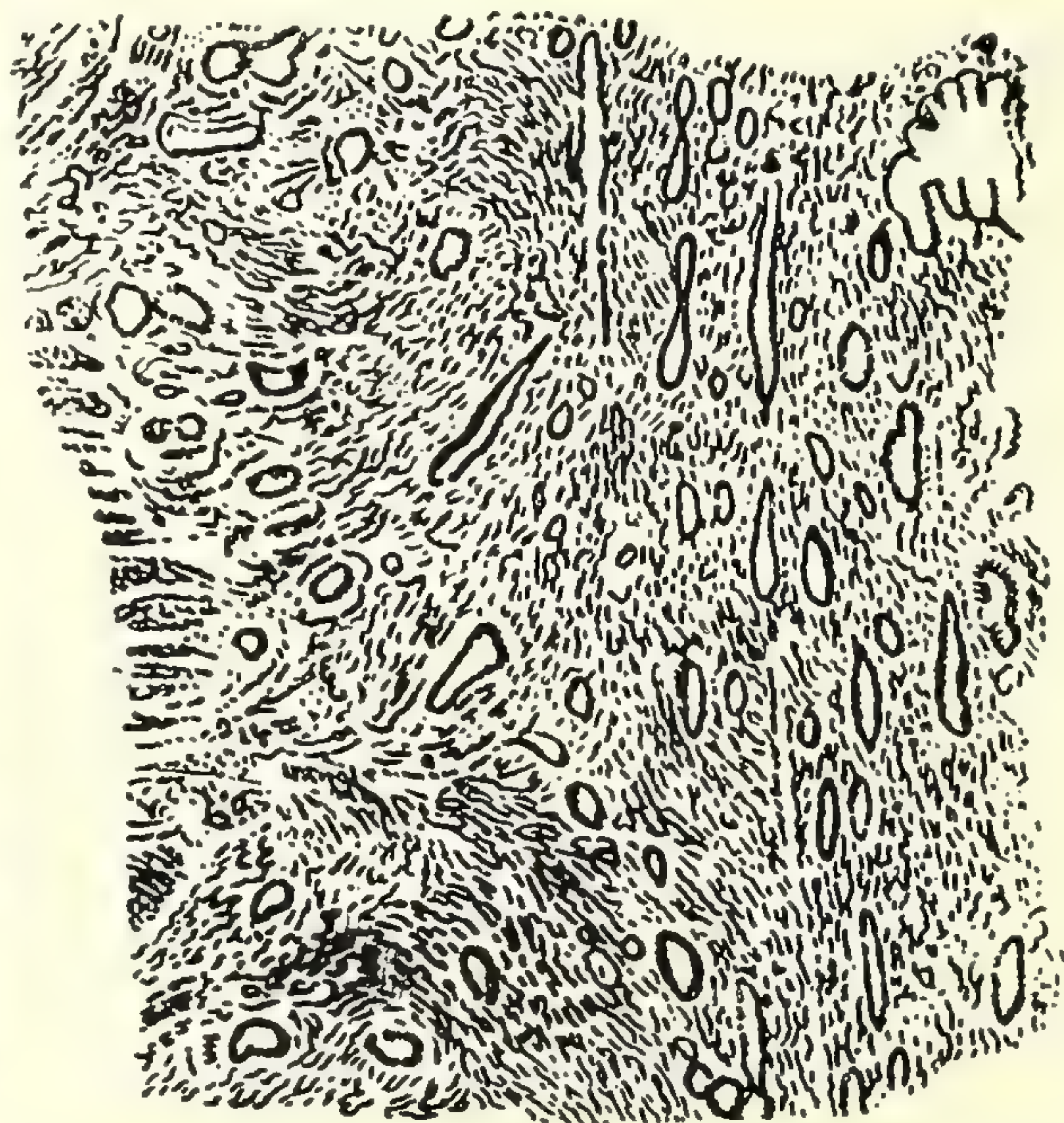


FIG. 37.—The upper layer of the uterine membrane in a menstruating woman has broken down. Regeneration follows quickly. (After Lindemann.)

*struation*. Are we able to determine at which precise moment of the monthly cycle the ovule is extruded from the ovarian follicle? Obviously, this is highly important, and in various ways. The ovule, fresh from the follicle, is certainly ready for fertilisation; moreover, if we knew the exact date of ovulation, both the real age of the embryo and the length of time before birth would be calculable. Unfortunately, the problem has not yet been fully elucidated. We know that menstruation without ovulation is very rare, but expulsion of ova without subsequent genital hæmorrhage is quite possible. Novak says: "Till now we have only ascertained that ovulation does not synchronise with the monthly flow, but precedes



it. Also, we know that, during menstruation, the corpus luteum has already reached its degenerative stage. But we are not yet sure of the date of follicular rupture, nor the associated questions of the rate of maturation and development of the corpus luteum." Siegel, on the other hand, believes that his questionnaires to families of soldiers on furlough have proved the best time for fertilisation to be shortly after the menstrual period : that is to say, in the *phase of post-menstruation*. The aptitude decreases during the interval and in the pre-menstruation phase (some) women are almost sterile. The maximum of conceptions was between eight and nine days after menstruation.

It is impossible to be more precise in our present state of knowledge. As we do not know the exact duration of the ovum's existence, nor that of the spermatozoon, we are unable to calculate the exact age of the embryo. Triepel believes that fertilisation generally takes place between the 16th and 24th days of the cycle, as reckoned above, and that the maximum chances are on the 16th.

[The whole question of the relation of ovulation to menstruation and the time of ovulation has recently been given fresh impetus through important work among the higher primates and also as a result of current controversy on the so-called "safe period" from the point of view of the likelihood or not of conception. The belief that the mid-week or fortnight in the month is a "safe period" is now almost wholly discarded. Dr. Enid Charles, among others, has pointed out that the results of modern research point to two conclusions. Ovulation varies within wide limits in the human species, but the time at which it is most likely to occur is from the 7th to the 13th day, or as some think, midway between two menstrual periods. Thus the time of maximal fertility is in the mid-period, and this well accords with the Jewish interdiction of coitus in the seven days following menstruation.



FIG. 38.—Post-menstrual mucous membrane.

It is not yet known with any degree of certainty how long the sperm can live and be capable of fertilisation. Wide limits are probable, although the times previously accepted seem to be becoming less as research continues. However that may be, the week preceding menstruation is possibly the least likely period for fertilisation, unless, as has been thought, coitus itself may lead to a discharge of the ovum as is the case with certain animals, and as T. Bell seems to have believed in his *Kalogynomia*, p. 192.]

We shall now briefly consider the remaining endocrine organs. L. Fraenkel, in some of his papers, clearly demonstrated that the corpus luteum was a recurrently regenerative gland : its secretion is said to be a lipoid, and, according to Herrmann, a derivative of cholesterin. He has been able to compose it chemically as a thick, yellow, viscous, oily product. Seitz extracted two separate constituents from the corpus luteum : one, a luteolipoid, which slows down or suppresses menstruation ; and a lecithalbumin (Lipamin) which has the contrary effect. It increases the menstrual flow in women, or restores it again in conditions of amenorrhea, whence it may be an abortifacient. The secretions of the corpus luteum control the menstrual function, prepare the female organs to receive and nourish the product of conception and inhibit the growth of fresh follicles till pregnancy is



over. But these luteal secretions are only a part of the endocrine apparatus. The corpus luteum has no power to determine the organic development of the female organs, or the psychic manifestations of emotion in women : these are under the domination of the interstitial cellular tissue of the ovaries.

These interstitial cells appear to consist mainly of follicles which have either reached the stage of *involution* or have not matured (latency). They are said to influence the special trend of the normal woman's erotic impulse, *i.e.*, towards man. Some authorities dispute their existence, but their arguments are not convincing. They do not explain which organs furnish the internal hormones previous to the first corpus luteum. Limon, on the other hand, describes the determinative ovarian parts in mammals as large cells grouped around the blood vessels and resembling those of liver and suprarenal capsules, but smaller in size than the distinctive cells of the corpus luteum ; and Seitz and Wallart have proved the same facts in human subjects. Wallart claims that these cells steadily proliferate until puberty, after which the follicular mechanism comes into play. This is as might be expected, for the follicles do not function in producing ova before puberty. During pregnancy the interstitial cells again proliferate and there are traces of them after the change of life. But, in human beings, these important cells are not concentrated into a separate gland. Seitz states that all the larger follicles are dispersed during pregnancy, forming a further reserve of fatty substance called by him *thecalutein* cells, as distinct from the lutein cells of the corpus luteum itself. Thus we must assume that the thecalutein cells regulate the psychic factors in the sexual life of the woman and promote the development of secondary sexual characteristics, in the bony structure of the skeleton, the amount of fat and its distribution, the hair on head and body, the throat and larynx, the breasts, and the actual genital organs in the earliest years of life.

The general working of the ovaries may be seen negatively as well as positively. Consider the effects of their total removal (castration). If castration occurs before puberty, growth is arrested : if afterwards, there is a general degeneration of the whole genital apparatus. If the ovaries are removed after a pregnancy has begun, its further stages are hindered. The specific degeneration following castration shrivels the genitalia and stops the monthly period. Von Franqué has shown that there are also nervous symptoms, like those which generally accompany the change of life and due to decrease in organic functions. They may include cardiac palpitations, rushes of blood to the head, sensations of fear and disquiet, profuse perspiration, vertigo and sleeplessness. They are ascribed to the extra activity of the suprarenal glands, which overpower the waning ovarian activity. The typical symptom of "the change" is, however, the cessation of the monthly periods. And there is a change in some or all of the secondary characteristics. There is a loss of the roundness of the hips, thighs and bust ; hair grows on throat or upper lip and the pubic hair approaches the masculine type ; the voice often changes noticeably and becomes both harsher in tone and deeper in pitch. In other words, the woman's body loses its special qualities and approaches an intermediate or asexual type.

We know already that the ovaries are not the only organs with specifically feminine internal secretions. It is possible that the epithelial cells of the oviducts also share in the endocrine flow after each follicular rupture, which would mean, in all probability, that they are also influenced by the corpus luteum. Bouin and Ancel state that in the second half of pregnancy a further endocrine organ appears in the wall of the womb : it consists of large, spindle-shaped or polygonal cells of



darker plasm and they call it the myometrial gland. Fraenkel believes that it is not in evidence in every individual case, but agrees that it influences the secretion of milk. Guggisberg is of opinion that the main body of the pregnant uterus itself secretes substances which prepare its muscular structure, and here pituitary secretions might also be of influence.

Herrmann has investigated the placenta and states that a substance with similar properties to those of the corpus luteum may be extracted. Bouin and Ancel concur that this substance has endocrine action on the mammary glands after the fourth month of gestation. Basch demonstrated that injections, both of ovarian secretion and of placental extract, increased the size of the mammary glands in a pregnant bitch ; and Halban made the same observations. It has been stated that the typical effects of castration in doe rabbits has been obliterated by injections of placental extract ; and it has been shown that both the embryo and the more developed foetus contribute this placental stimulant to the mother's blood stream and prepare her breasts to feed them. It has also been maintained that the breasts make an independent harmonic contribution which stimulates the genital organs in the same manner as the posterior pituitary. [Recent work on the placenta has shown that its secretions are of great importance ; and Aschheim and Zondek have demonstrated that the blood and urine of pregnant women contain theelin and also a certain amount of hormone from the anterior pituitary. By the injection of small amounts of female urine into test animals the nature of the reaction can be noted and a fairly reliable test for pregnancy can be established as early as the sixth week.] Thus the entire genital complex function in women is regulated by the joint activity of the endocrine glands.

Let us now consider the normal process of fertilisation in woman.

An ovarian follicle develops and swells and begins to secrete a substance which activates the oviducts, making them ready for the transport of the ovum. Then the uterine lining is altered and prepared for the reception of the ovum after fertilisation. This follicular product also prepares the genital organs for the reception of the sperm cells, and causes a rhythmic expansion of the breasts, but not, as yet, the secretion of milk. These manifestations steadily increase, while the follicle bursts, expelling the ovule, and they continue to increase if the ovule is fertilised. The fertilised ovule interacts on the corpus luteum of its parent follicle and inhibits the growth of a fresh follicle which would interrupt the process and bring on miscarriage. Meanwhile, the placenta has been formed, and, in a sense, has collaborated with the corpus luteum graviditatis in expanding the mammary glands and holding back their milk ; whilst the thyroid quickens metabolism in order to meet the increased demands of mother and child. During pregnancy a woman's weight increases by about a fifth and her heart expands by about a quarter. Towards the end of pregnancy the corpus luteum slowly degenerates, the suprarenal cortex increases in size and these glands exercise a tonic effect on the womb. The myometrial gland, placenta and, above all, the embryo, check further mammary growth while furthering the secretion of milk. Specific mammary secretions, together with those of the posterior pituitary, give the signal for the labour pains and finally the birth itself. The normal duration for pregnancy is 10 lunar months, that is to say, 10 times 28 days. The special structures and activities of the pregnant organism subside after birth, but lactation prolongs them. However, a new impregnation may easily occur before lactation ceases.

In the unfertilised functional cycle pregnancy does not occur. The ovule is not fertilised and its "yellow body" becomes a "corpus luteum spurium" which



disperses and cannot check the development of a fresh follicle. This fresh follicle breaks down the proliferating uterine membranes and brings on *menstruation*—the birth of the unfertilised ovum—while extruding and preparing for its own ovule.

Thus, during the unfertilised functional cycle, the controlling body is the ovary and its secretions : but, when fertilisation occurs, this control is mainly taken over by the secretion of the other endocrine glands.

We shall deal with both the secondary characteristics and the instincts of sex in later chapters. But it is now appropriate to consider how sex is differentiated in the course of embryology : for this matter is closely connected with the properties and secretions of the essential gonads, *i.e.*, testes and ovaries, respectively.

## 2. THE EMBRYOLOGY OF SEX

We do not yet know how far there is sexual differentiation in the essential germ plasm. Some authorities uphold the view that there is differentiation of male and female in the spermatozoa ; others attribute this differentiation to the ovules ; others, again, believe that both sperm cells and egg cells may be either male or female, or, at least, disposed towards maleness or femaleness. But the most likely hypothesis attributes sex differentiation to phenomena of inheritance or determining genes, and admits that both spermatozoa and ova may contain male and female elements. In various forms of animal life sex differentiation certainly arises independently of the particular arrangement of the chromosomes, and it is possible that the same is true of our species as well.

We are able to distinguish special sex chromosomes and we know that in the course of formation the number of the chromosomes is reduced, one sex chromosome remaining in the egg. Half of all sperm cells has a sex chromosome but not the other half.\* In the egg cell the sex chromosome is equally divided, so that each possesses this distinctive element. If an ovule is fertilised by a spermatozoon which does not contain the proper sex chromosome, the resulting product of conception develops as a male. If the fertilising spermatozoon has the sex chromosome, the resulting product evolves as a female. We may therefore conclude that there are spermatozoa which produce daughters and others which produce sons. Perhaps there are other factors as well : possibly some of the egg cells only react to—or attract—one kind of sperms, and others only to the other kind. This is, so far, unproved, but we do know that when fertilisation occurs it decides the sex—or the predominant sexual type—of the living creature to be born.

Fertilisation having occurred, we can now gradually trace the growth of the sex characteristics.†

The sex organs are contained within a portion of the urinary apparatus of the embryo which develops very early and is distinguishable before the actual genital structures. We, therefore, can speak of the *urogenital apparatus*.

It develops out of the *mesoderm* (as distinct from the *endoderm* and *ectoderm* respectively), or central layer of the germinal membrane, which separates along the rudimentary spinal site and forms the so-called *celom* or embryonic body cavity and the urogenital canal. Within the earliest weeks of embryonic growth, the so-called *pronephros* emerges, a duct runs from it, but, in the third week this

\* [This statement requires modification.]

† The earliest human ovum (the Miller ovum) was about 11 days old. Of the older ones, the Teacher-Bryce I, Peters' and Florian's are representative. For three recent cases of interest see Ludwig.



structure has been superseded by the *mesonephros*, while the duct remains and develops. It is known as the *Wolffian* duct (Fig. 39). The mesonephros is differentiated from the urogenital sinus in the seventh week; the kidneys assume their typical form. And two weeks before, on either side of the rudimentary spine and on the inner dorsal surface of the embryo, two folds or pads appear, called the genital ridges.

*Germ cells* or distinctively sexual cells—which have, hitherto, been scattered—congregate within these regions and modify the epithelial germ plasm into glands, which are differentiated at about six weeks. They develop either as testes or as ovaries, and send their distinctive hormones into the blood stream, acting thus already as functional endocrines. Hirschfeld has suggested *Andrin* as a suitable name for the testicular hormone and *Gynæcin* for the ovarian. The germinal gonad

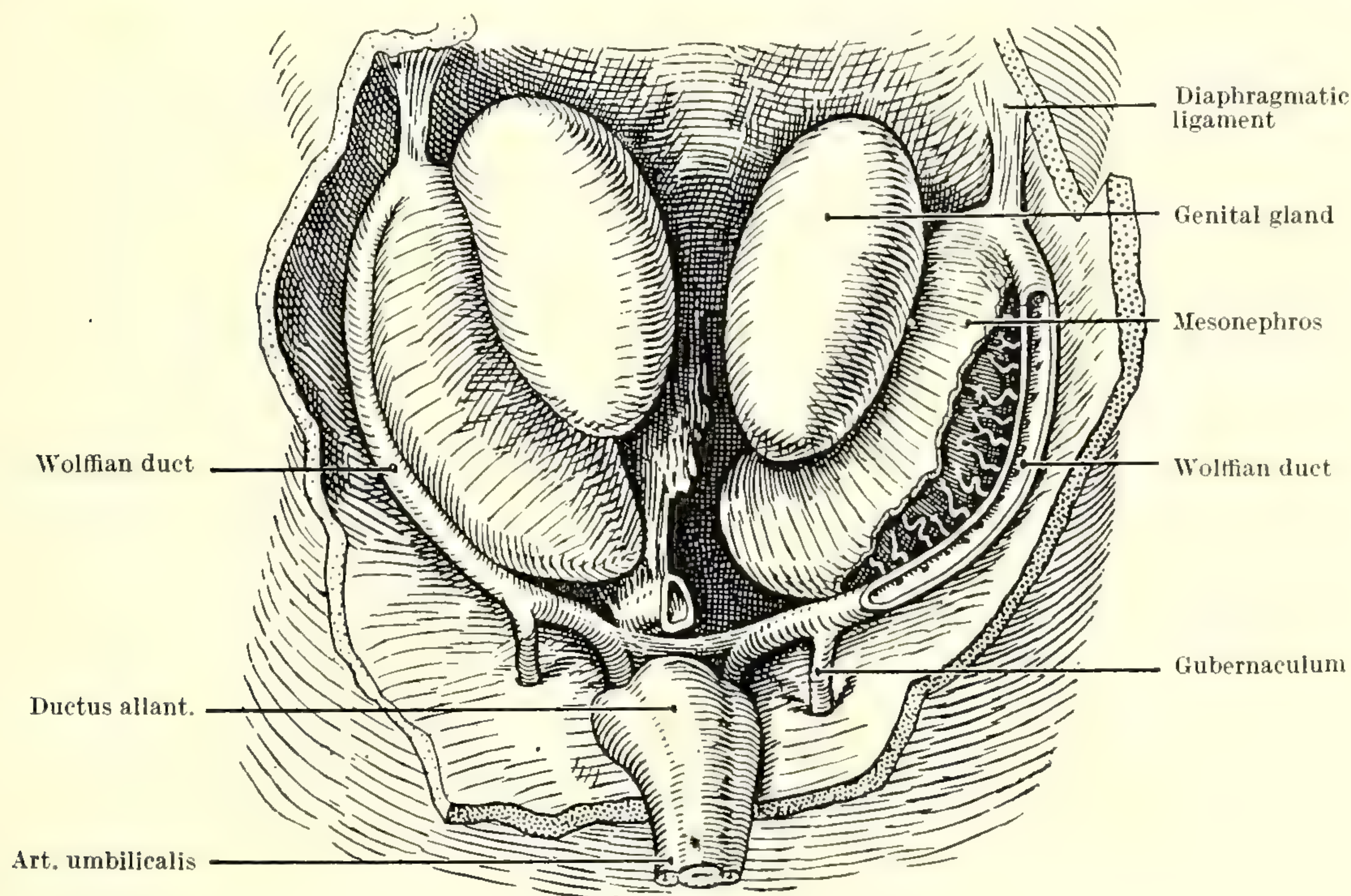


FIG. 39.—Formation of the sex organs. (After Kollmann.)

is at first, however, undifferentiated sexually; it may therefore be modified in its male trend or its female; and it can be, and has been, maintained that there is no absolute organic male nor absolute organic female, but that the structures which show the greatest number of male characteristics are masculine and those with the greatest number of female characteristics feminine.

The range of sexual differentiation in human beings is like the keyboard of a musical instrument or a chart of colours, which runs the gamut from the palest to the deepest tints, even from black to white. There is an enormous diversity of *inter-grades* or intermediate types between the typically masculine and the typically feminine.\*

\* In the words of Professor F. A. E. Crew: "It is not the sex chromosomes that ultimately determine sex; it is the sex determining gene-complex, and disharmony among the elements of this may be such as must lead to the assumption of a totally inappropriate sexual characterisation . . . the sex chromosome constitution does not necessarily agree with the sexual characterisation" ("Sexuality and Intersexuality," B.S.S.S.P. Publication, No. 14, 1925).



Within the mesonephros is a network of minute tubules transversely arranged and opening into the Wolffian duct. In the further development of the sex organs both the mesonephros and the gonads collaborate and interlock. The mesonephros is gradually obliterated, but its upper portion evolves into the epididymis in the male, while the lower extremity atrophies until, finally, only the paradidymis (or Giralde's Organ) remains.\* In the female, even less is left of the primordial structure. The upper portion becomes the ep-oöphoron (or Rosenmüller's Organ) and the lower the par-oöphoron.

There is a double differentiation from the Wolffian and Müllerian ducts respec-

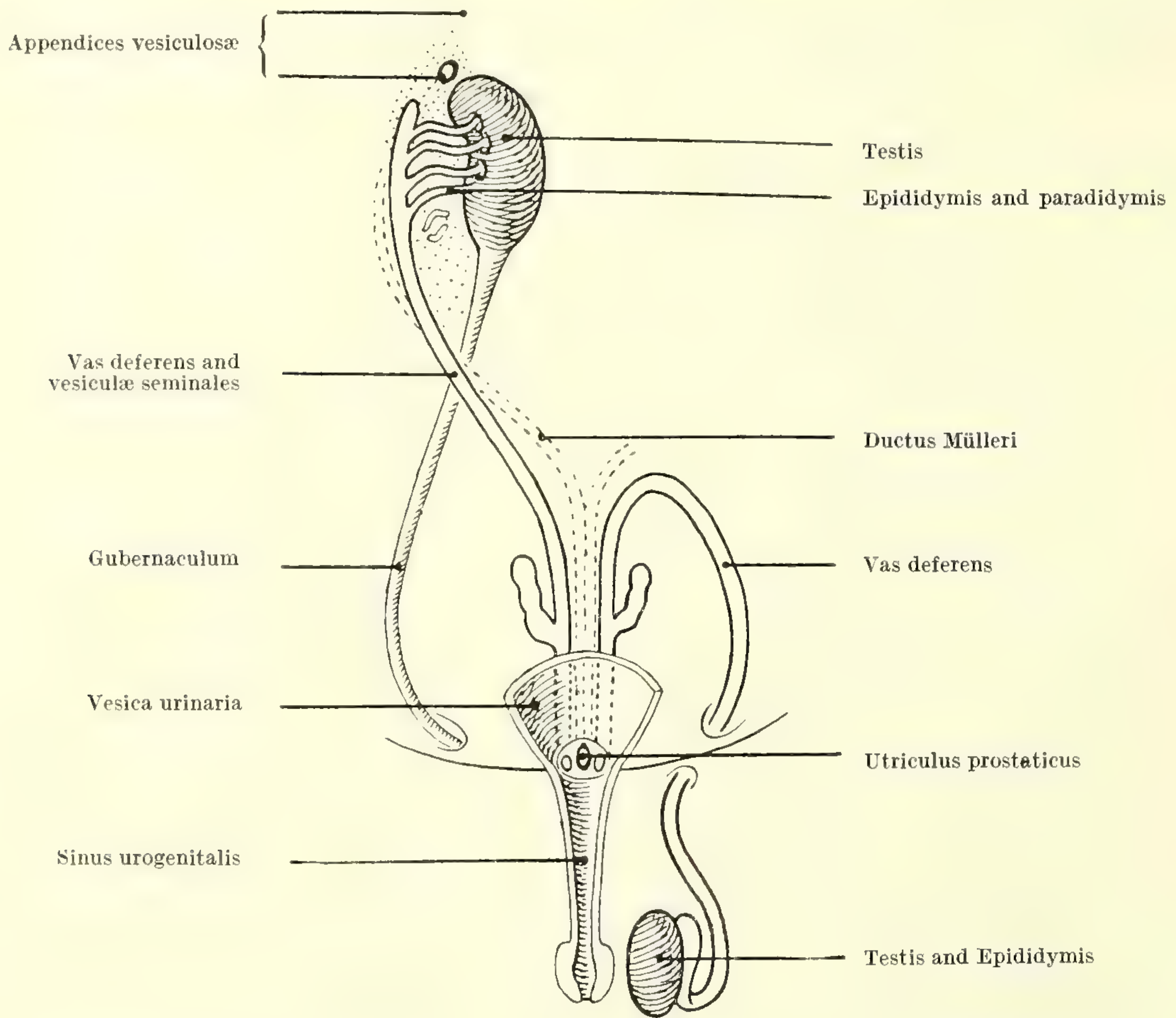


FIG. 40A.—Development of the inner sexual organ of the male. (After Kollmann.)

tively. In the male, the *Müllerian* duct atrophies and the *Wolffian* is elaborated into seminal ducts or *vasa deferentia* (with the seminal vesicles and epididymis). Finally, nothing is left of the *Müllerian* duct but *Morgagni's hydatids* (*appendices vesiculosi*) and a small cul-de-sac, corresponding to the vagina in women.

In the female the two main ducts approach one another from either side and unite in a tube or canal: the Wolffian duct becomes obliterated and absorbed into this new structure, but its remains are sometimes found in the form of cysts in the internal genital tract of women. A conspicuous vestigial trace is known as *Gaitner's duct*; others again, as hydatids. The upper extremity of the Müllerian duct becomes a funnel-mouthed cone and this further evolves into the oviducts or tubes,

\* [This statement requires modification.]



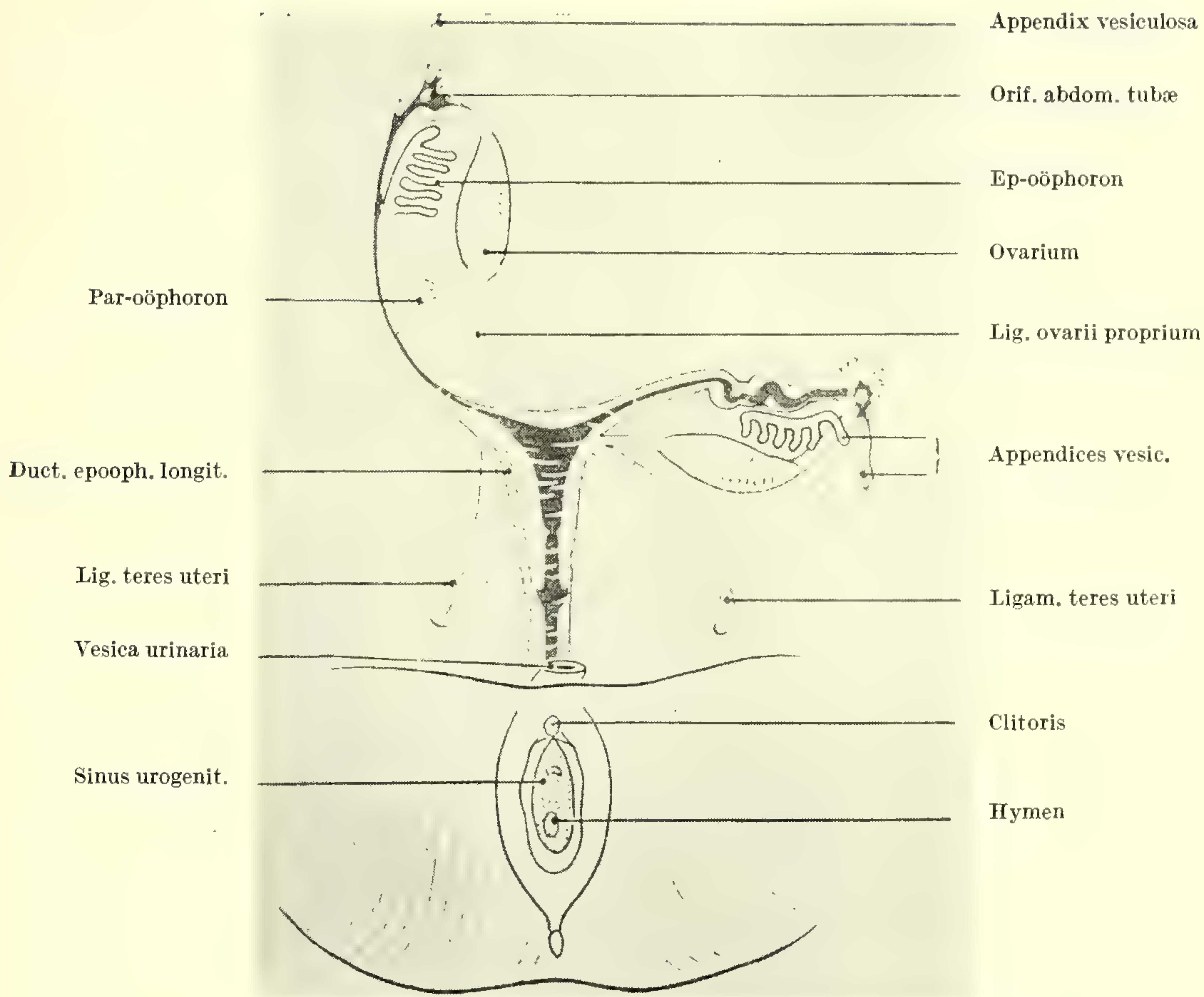


FIG. 40B.—Development of the inner sexual organs of the female.

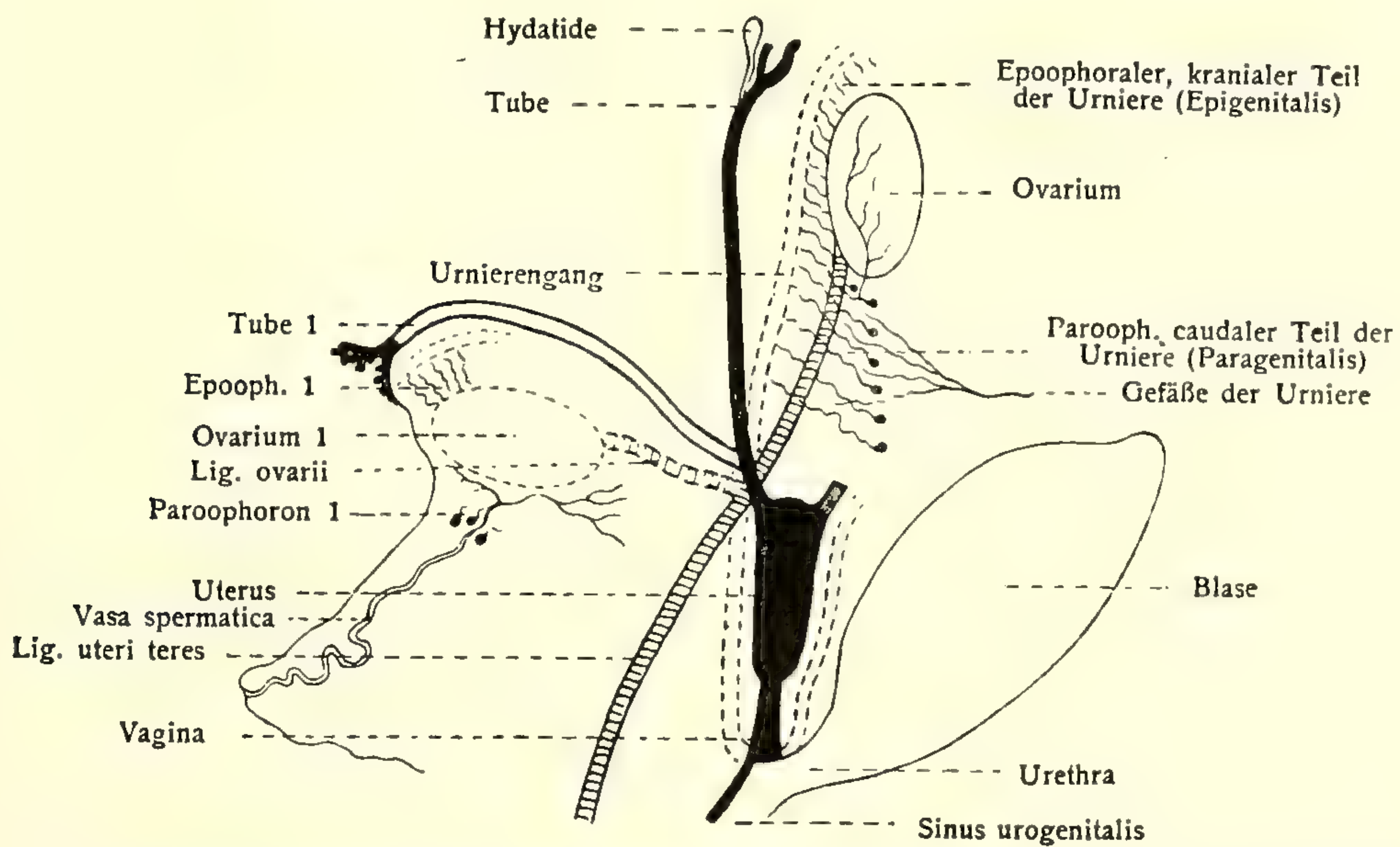


FIG. 41.—Development of the female sexual organs from the indifferent anlage of the urogenital system.



the uterus and vagina. If the union of the Müllerian and Wolffian ducts is not complete, there ensue malformations of womb and vagina, even bifid (double) forms. From Müller's eminence, at the lower extremity, develop the hymen and Skene's glands (Figs. 40A, 40B, 41 and 42).

In the first month both the Müllerian and Wolffian ducts and the allantois open into a common orifice, termed the cloaca. Part of the allantois becomes the bladder and part the urogenital canal into which the Müllerian and Wolffian ducts open. In the second month the exterior male organs emerge; there is a rudimentary penis and the perineum appears, separating the cloaca (which becomes the anus) from the urogenital aperture; and, as the perineum expands, so these two orifices grow more widely apart (Fig. 43).

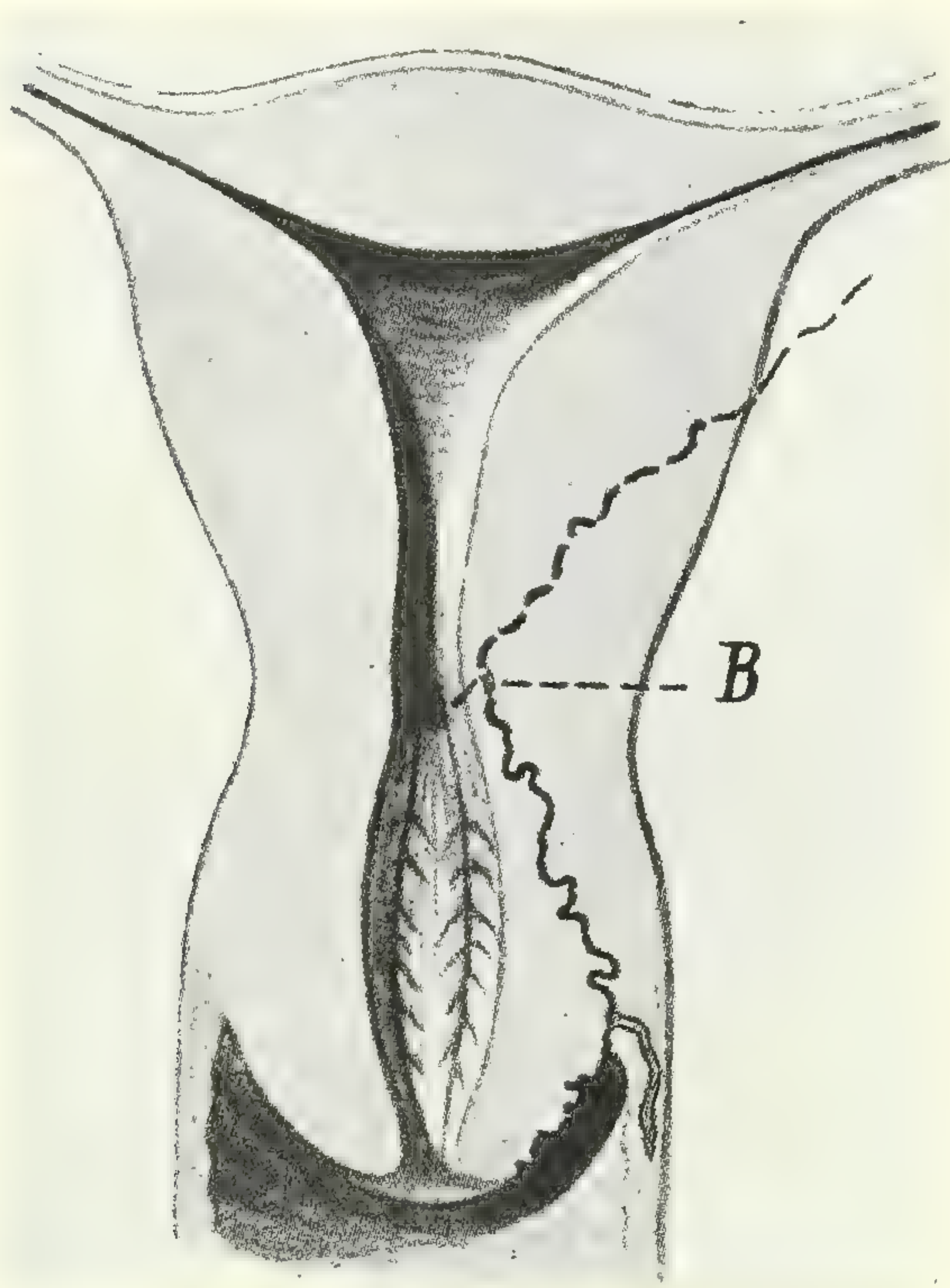


FIG. 42.—Atypical course of the Wolffian duct. (After Schottländer.)

In the eighth week, definite external differentiation begins. In the female the general changes are not excessive; the distance between the apertures grows and the vestibulum vaginae is formed; the genital cleft is developed into the labia minora and the genital eminence becomes the clitoris. The labio-scrotal folds become the fleshy labia majora, whilst in front the mons veneris is formed.

In the male the changes are more definite and extensive. The genital eminence becomes the penis and the genital sulcus or canal is formed in that organ in its middle portion (Fig. 44). The pads or folds become the scrotal sacs, which subsequently meet and unite in their median line, into the normal scrotum. But the scrotal sacs at first are empty, for testes, like ovaries, are concealed within the abdominal cavity. Both types of gonad have to make a descent into their future site, but the female gonads move first (Fig. 41).

In the third month the ovaries have already reached the pelvic cavity; in the sixth they are in line with the upper portion of the uterus and reach the pelvis minor, where they remain connected to the broad ligaments of the uterus. If they drop further, this must be regarded as an abnormality and is termed ectopia, or ovarian hernia. They may even protrude externally and be taken for testes.

In the male the testes approach the abdominal inguinal ring in the sixth month of pre-natal life, enter the inguinal canal in the eighth and descend or emerge externally in the ninth. In normal cases the testes slip into the sacs prepared for them and the inguinal canal closes behind them. If, however, either one or both testes remain in the inguinal canal this condition is termed cryptorchism or undescended testicle. Cryptorchism, ovarian hernia, hypospadia, etc., are all phases and stages of *hermaphroditism* and we must deal with them in somewhat closer detail for, morphologically, as well as mentally, the sexes may merge together in a series of intermediate steps.



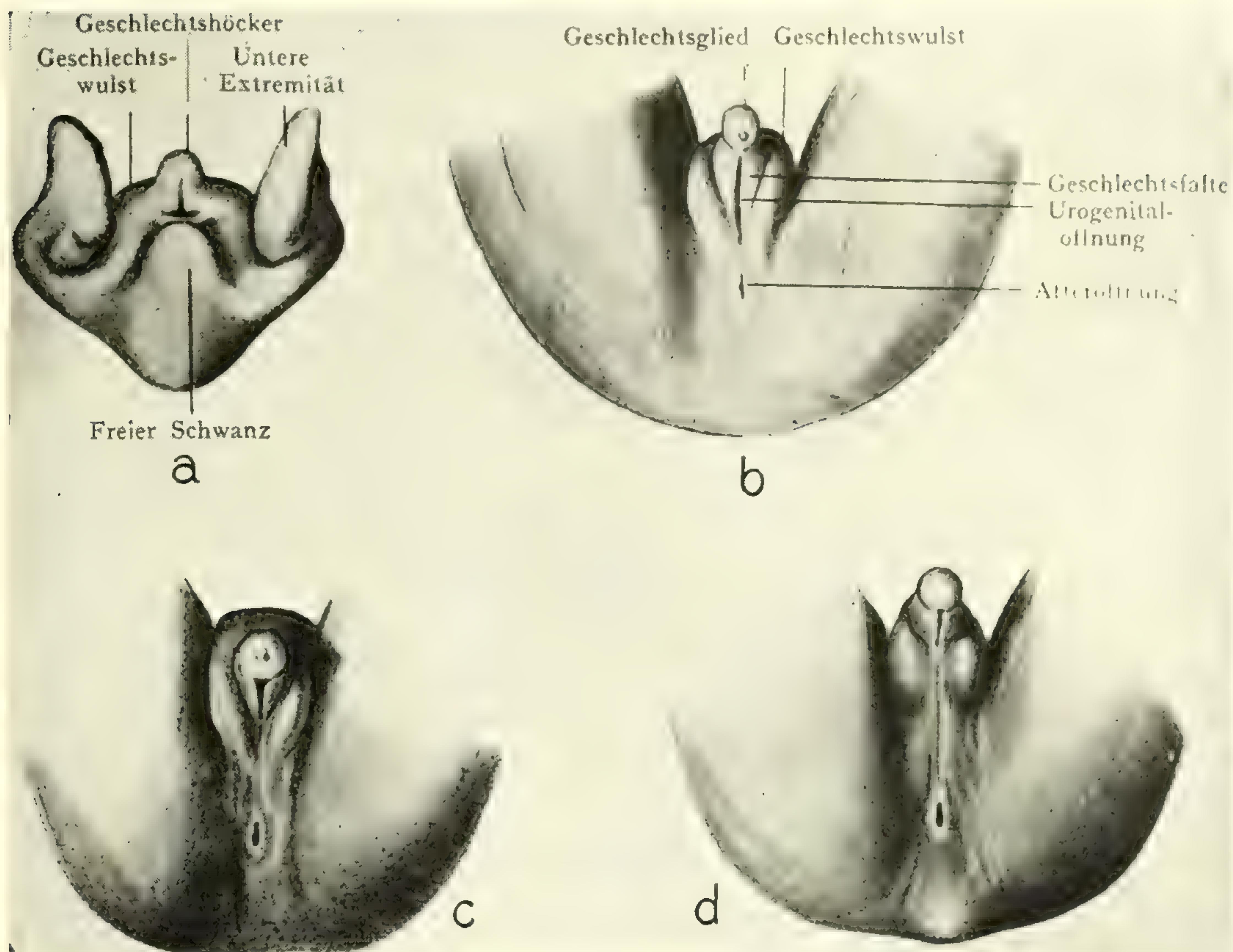


FIG. 43.—Development of the external sexual organs. (a) Earliest stage ; (b) Indifferent stage (c) Female form ; (d) Male form. (After Merkel.)

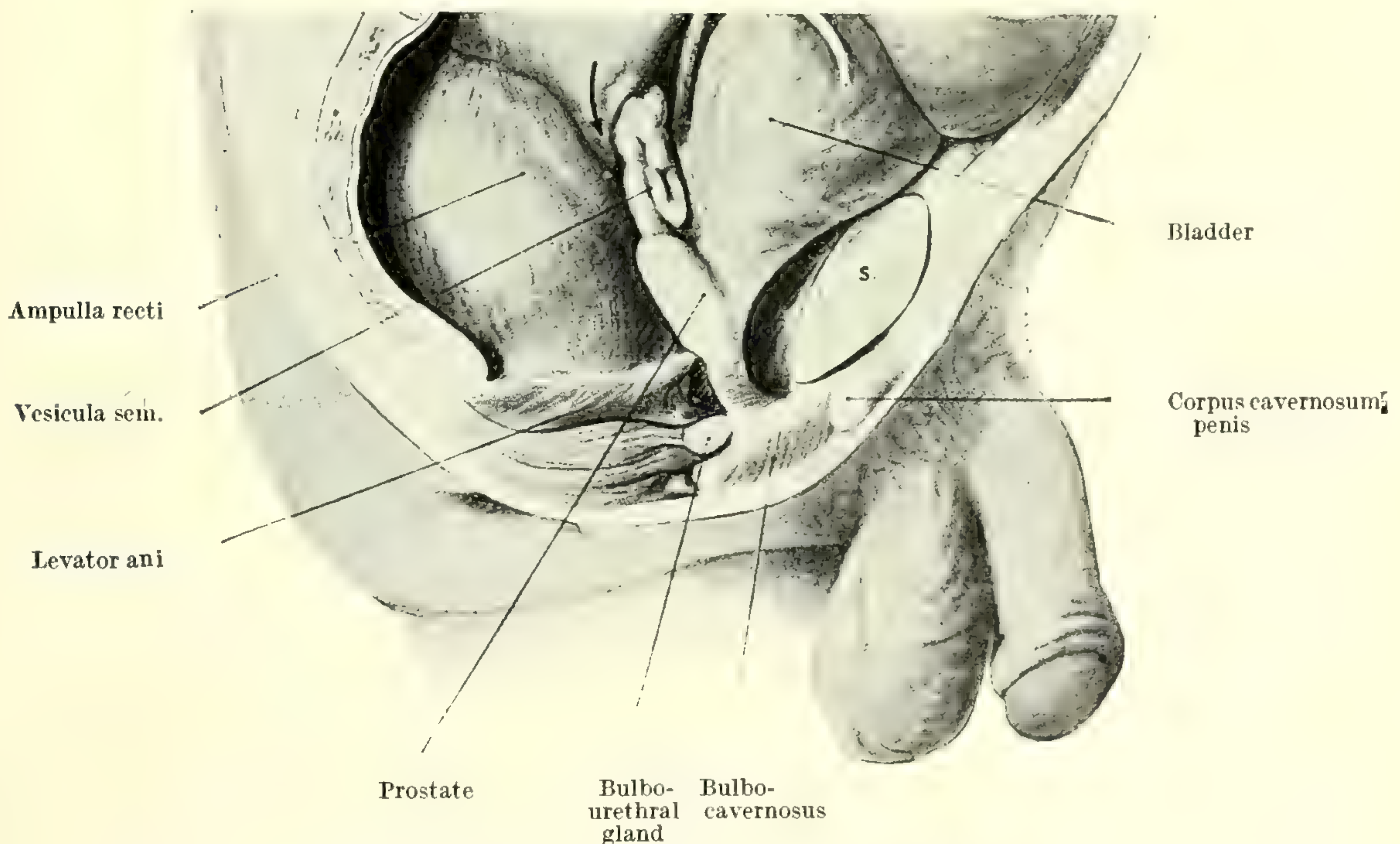


FIG. 44.—Adult male sexual organs. (After Corning )



We have seen that the embryo, in its first stages, appears both male and female. But the differentiation is occasionally neither definite nor complete; there is no "clean cut," but, while one sex may be dominant in physique and mind, of an individual, there are certain anomalies strongly suggestive of the opposite sex. If the endocrine secretions are abnormal either the actual gonads and genitalia, or the secondary characteristics (such as growth of hair, larynx and vocal pitch, bust development) or, finally, the direction of desire, will differ from the average type. Then we enter the far-reaching territory of hermaphroditism and intersexual types.\* The possible permutations and combinations here are very numerous. If the gonads

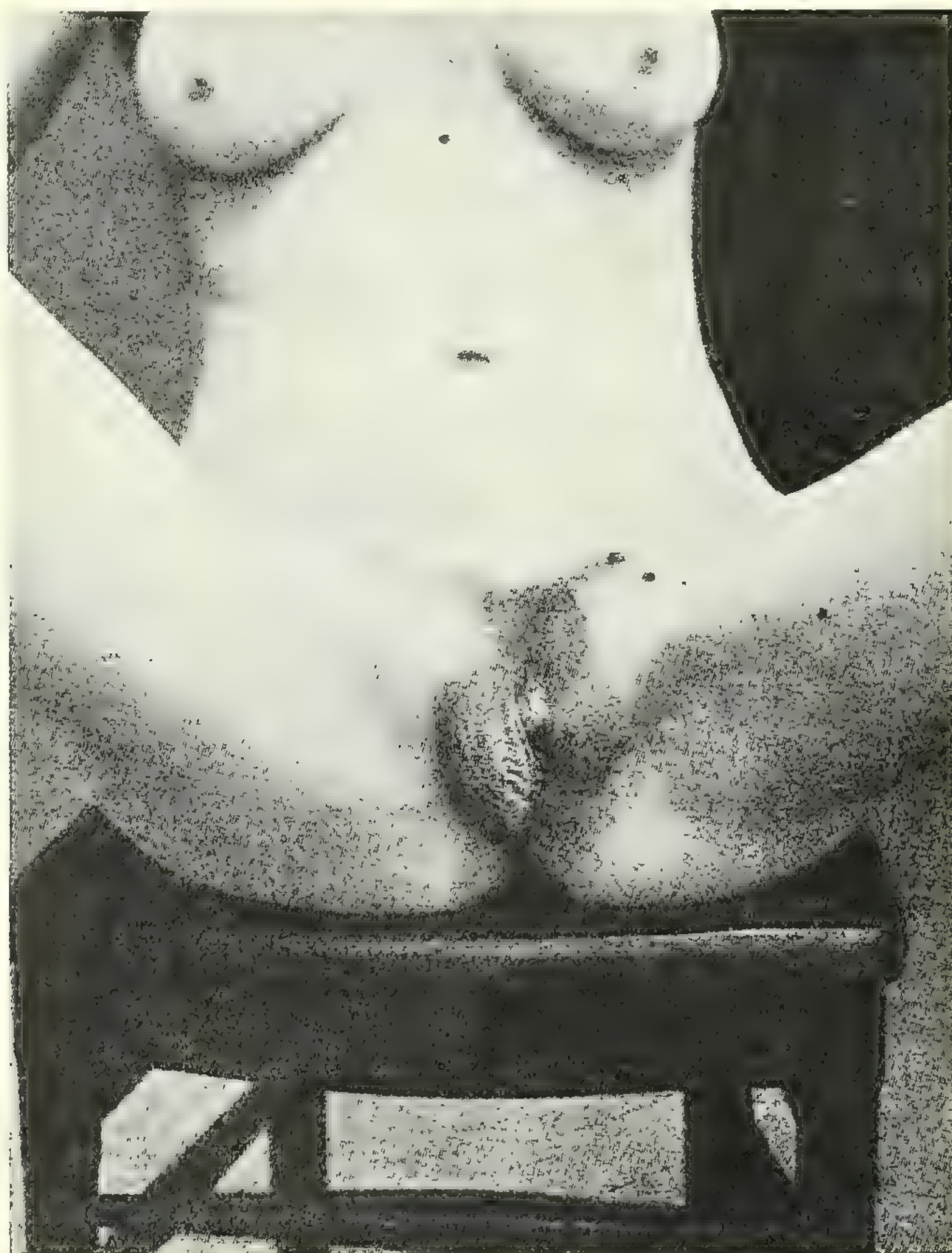


FIG. 45.—Penoscrotal hypospadias with rudimentary penis. (After Neugebauer.)

and external genitalia contain examples of both sexes (*cf.* Rutherford), we can speak of hermaphroditism, they are *genuinely hermaphrodites* (*Hermaphroditismus genitalis*) (*cf.* Figs. 45, 46 and 47). If, on the other hand, the genitals are normal but the secondary characteristics atypical in structure, we speak of *Androgyny* (Fig. 48). And, if the mental and emotional faculties and trends alone are affected, then we come to the fields of *Transvestitism* (Figs. 49 and 50), *Homosexuality* (Fig. 51) and *Metatropism*. All these types, which arise through disturbance in sexual differentiation from whatever cause, have been called by Dr. Magnus Hirschfeld, sexual intermediate types.

\* [In certain cases it may be possible by surgical means, partially at least, to transform a "man" into a "woman" and thereby cause the subject to assume a *rôle* more in keeping with his own feelings. It is unlikely, however, that a fully satisfactory solution could be thus found for such individuals, as a complete transformation both in the physical and mental spheres is far from easy to attain. An account of such an attempt in the case of the Danish artist Wegener has recently been published.]



Hirschfeld, in his "Sexualpathologie," makes the following classification :

I. *Hermaphroditismus genitalis*, or true *Hermaphroditism*. Mixture of male and female genitalia in the same person

II. *Hermaphroditismus somaticus* or *Androgyny*. Mixture of other physical, secondary sex characteristics in the same person.



FIG. 46.—Penoscrotal hypospadias in a 26-year-old cook. (After Neugebauer.)

III. *Hermaphroditismus psychicus*. (*Transvestitism*.) Mixture of psychic characteristics.

IV. *Hermaphroditismus psychosexualis*. (*Homosexuality*, "*Metatropism*".) Masculine direction of desire in woman ; feminine in man.

In certain forms of mollusca hermaphroditism is normal and typical. (Cf. *Handwörterbuch der Naturwissenschaft*, III. 26, IV. 320.)

In human beings we observe that bisexuality, to a more or less pronounced degree, tends to "run in families," and may be inherited or appear collaterally. In many pronounced cases malformations of hypophysis and/or suprarenal glands have been demonstrated. We have already mentioned the male defect of



*cryptorchism*. In such cases there are no externally visible testicles and the undescended testicles are not normal in structure. There have even been cases of bisexuality in the gonads themselves: of glands containing both ovarian and



FIG. 47.—“Hermaphrodite” from Loango. (Anthrop. Society, Berlin.)

testicular tissue and secreting hormones of both types. These are termed *ovotestes*.\* We have seen that the primitive genital eminence can develop either as

\* Cf. F. A. E. Crew, who states:

“Abnormality of the genital system, taking the form of an intimate mixture of male and female genitalia associated with some degree of imperfection of the external reproductive organs, is common in the pig and goat and is by no means unknown in the human subject.

“... It was found, on examination, that the cases fell cleanly into one of two classes: (1) Those in which no morphological evidence of the previous or present existence of ovarian tissue could be found in the gonads, which were entirely composed of testicular tissue, with a histological structure varying with the position of the testis along the line between the primitive position and the scrotum, but always exhibiting some degree of degenerative change. And (2) those in which both ovarian and testicular tissues were present, the gonads being one an ovary, the other a testis; one an ovary, the



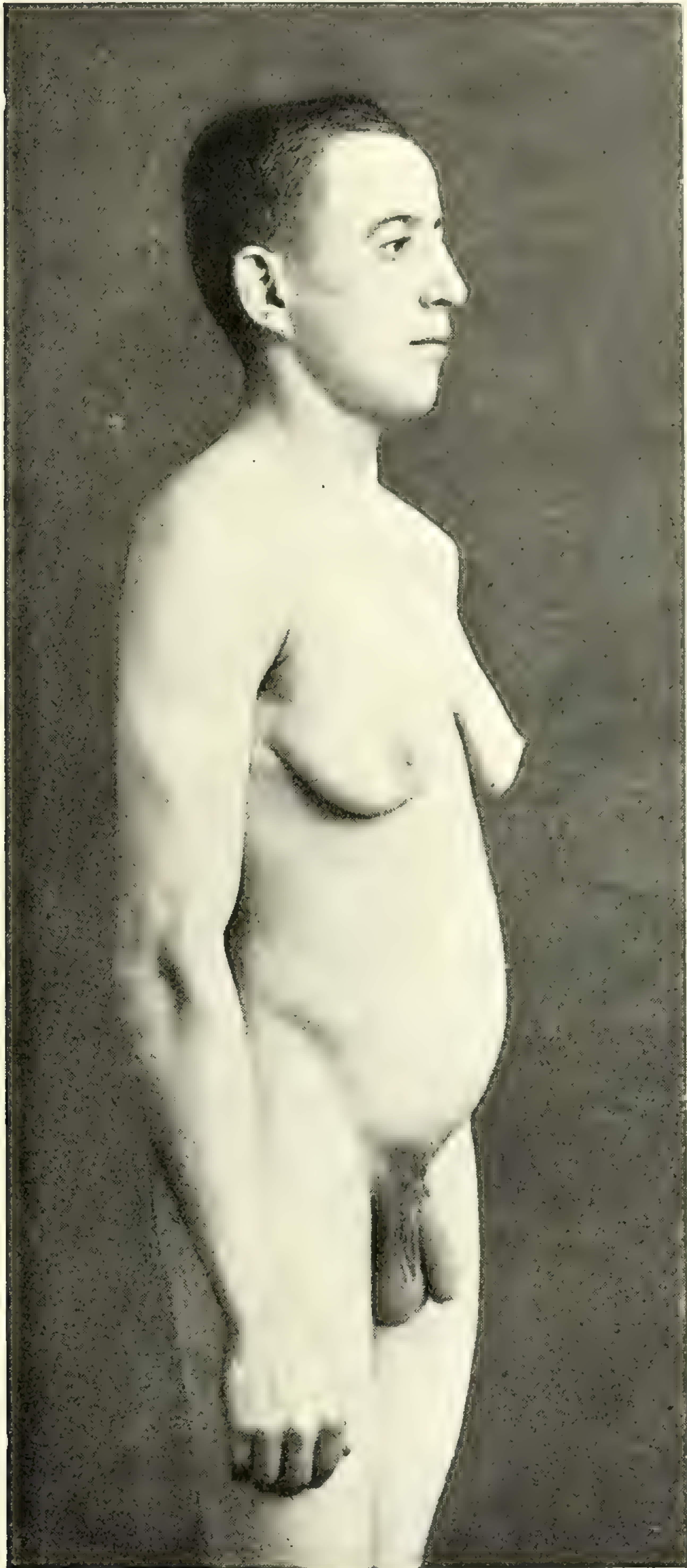


FIG. 48.—Androgyny. (After Goldmann.)



FIG. 49.—Homosexual female transvestite in male attire. (After Goldmann in *Gesch. u. Gesellschaft.*)

other an ovotestis; or both being ovotestes. In one case, there were paired ovaries within the abdominal cavity and paired testes beneath the skin of the perineum.

"It was noted that, in the cases of class (2), in which one gonad was an ovary, this gonad was always the left one and that, in an ovotestis, the ovarian tissue was invariably cephalad to and sharply separated by a well-defined belt of connective tissue from the caudad testicular portion. The ovarian tissue was invariably of comparatively normal structure, histologically, whereas, in the testicular tissue, the spermatogenic was always degenerate to some degree and the interstitial plentiful" (*op. cit.*, pp. 16-17).



the penis (male member) or as the clitoris (Fig. 53) ; the female labia and the male scrotum also evolve from one primitive undifferentiated form. If the labia develop the pudendal cleft remains between them ; but, in the male scrotum the cleft closes entirely.

If, however, the process of differentiation is disturbed or held up, the scrotal



FIG. 50.—Two male homosexual transvestites in female attire. (After Goldmann in *Gesch. u. Gesellschaft*.)

sac is not properly formed, even though there may be testes (whether normal or undescended), and the opening of the male urethra is either fully exposed or situated between the two sides of the scrotum—which may be either large or small, in comparison with average cases. This genital anomaly is termed hypospadias. (Fig. 52, 1–3.) It makes the external genitalia indeterminate, *e.g.*, intermediate. In women the clitoris may be so unusually large and cylindrical as to resemble the male organ.



In men afflicted with cryptorchism there are often effeminate traits of physique and features and, where there is hypospadias, there are generally a slight growth of beard, a high pitched voice, inadequate penile development and apathy or aversion towards women. Similarly, excessive clitoridal development often accompanies powerful bony structure, a deep or harsh voice and poorly developed breasts. In extreme cases of this anomaly there is atrophy of the uterus or excessive development of the labia or both ;

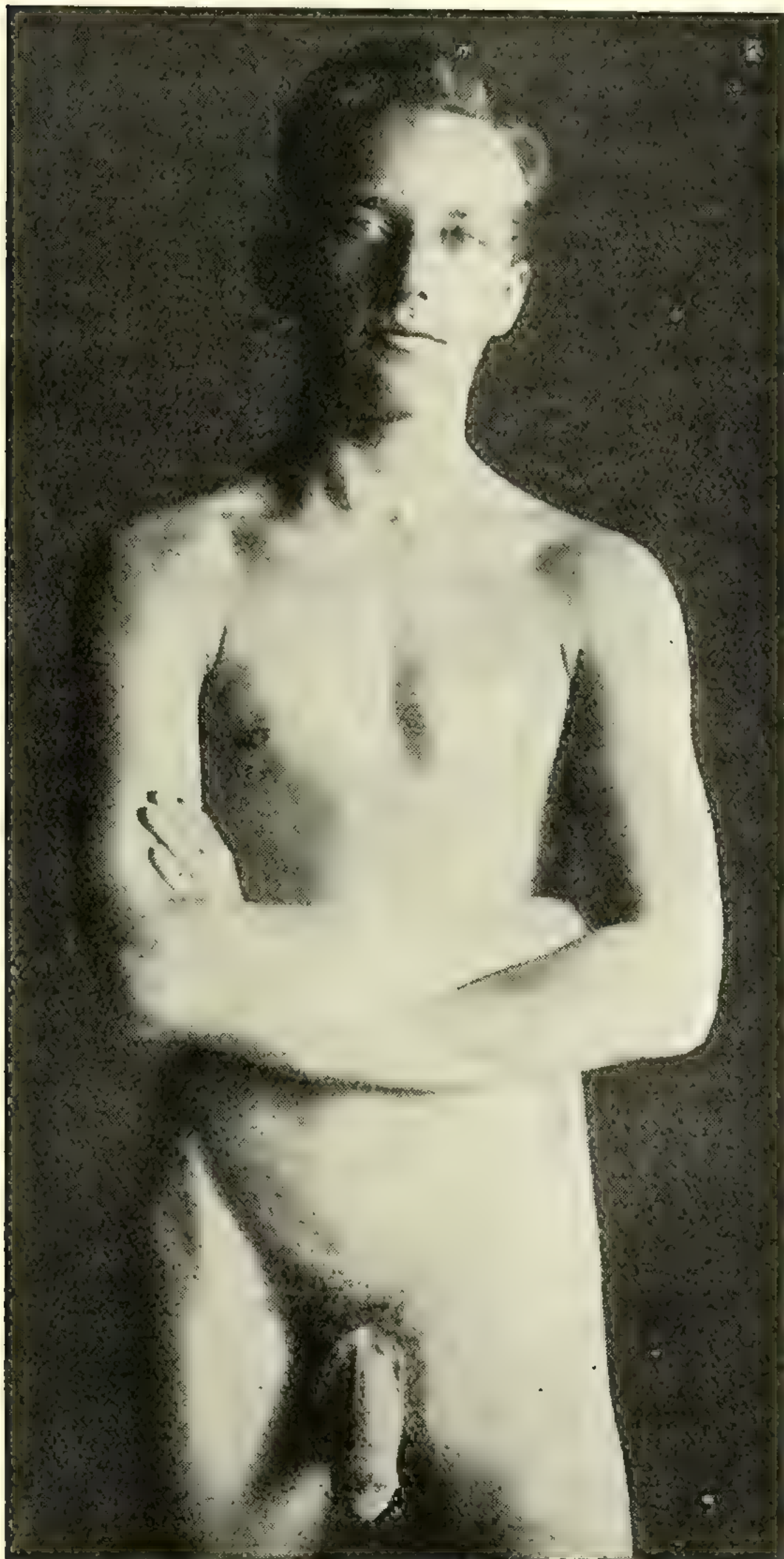


FIG. 51.—Male homosexual with virile bodily development. (After Goldmann in *Gesch. u. Gesellschaft*.)

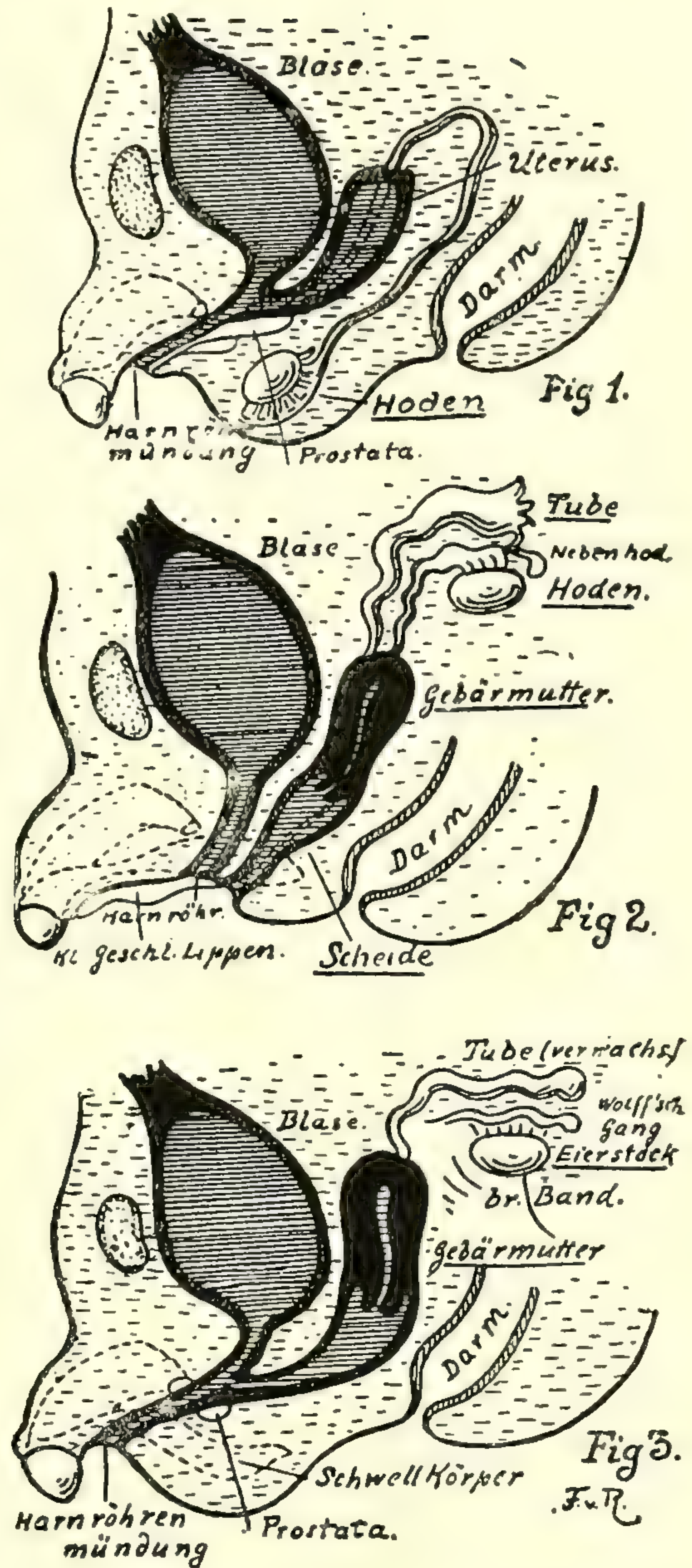


FIG. 52.—Hypospadias. (After v. Reitzenstein.)

- (1) Slight case of hypospadias with well-developed vagina (here called uterus). Male type.
- (2) Perfectly formed case of hypospadias. Near the vaginal orifice open the labia minora. Oviducts and testes are present but ovaries are lacking. Male type.
- (3) Slight case of hypospadias with fused labia majora. The vagina opens into the urethra near the prostate. Ovaries are under-developed and the oviducts imperfect. Female type.

and the characteristic differences are almost obliterated into an intermediate type. Steinach has been able to produce artificial examples by operative surgery.



To-day it is scarcely necessary to mention that Woman's specific nature, functions and qualities are as perfect in themselves as those of Man.

The founders of Classical Medicine and Natural Science — Hippocrates and Aristotle, for example—believed and taught the inferiority of women, physiologically and otherwise. They considered woman an incomplete, half-human being. Hippocrates stated that women were never able to use both hands simultaneously with equal skill (*Ambidexterity*). He further believed that the interior genital organs of woman

were exactly similar to the external genitals of men ; and that, in men, they were expanded and made visible by natural warmth and vigour but kept concealed in the body of the woman by the colder and feebler female constitution.

This ancient assumption has naturally no foundation in anatomical or biological fact. But it has had great influence on human history, through Christian dogma, closely connected as it is with certain later Greek (Hellenistic) schools of thought.

Woman is, contrary to animals, as distinctively and specifically human as her mate : and this is the case both genitally and generally.

Nevertheless, many persons, even investigators, have failed to realise in what attributes this specific humanity consists. The structure of the mammary glands, the function of menstruation and the existence of the hymenal membrane have, for instance (*cf.* Chapter VI., etc.), all been cited as typically human as distinct from animal characteristics (Figs. 54–58). But this view is erroneous. Woman is not the only potential mother with two breasts ; not only the anthropoid apes, but most monkeys and many bats have the same number of nipples and situated in a corresponding position on the thorax. As regards the hymen, Blumenbach has already completely disproved Albrecht v. Haller's theory that this membrane has any special "moral purpose" ; and Cuvier and other observers have found something analogous in other higher mammals.

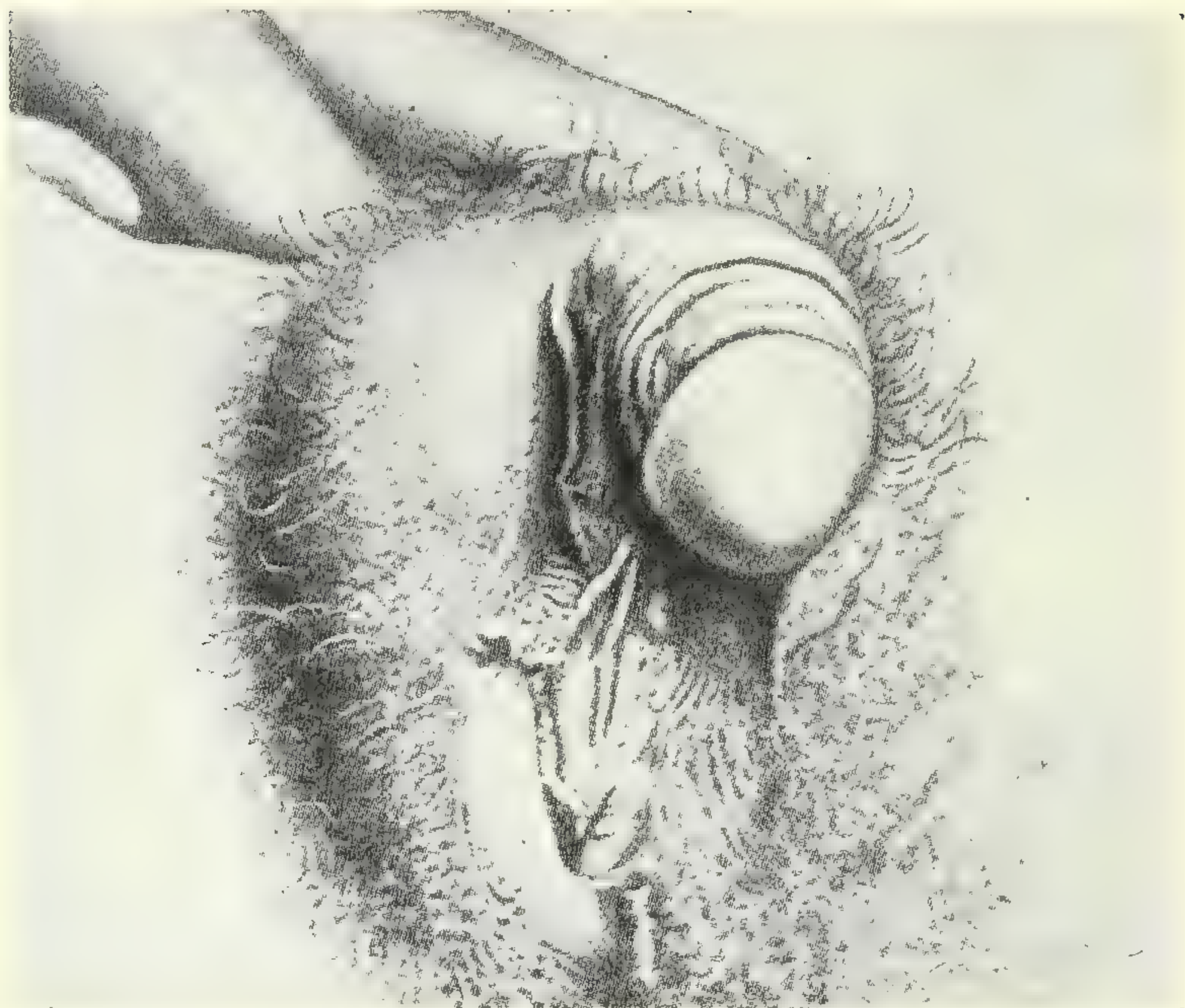


FIG. 53.—Penoscrotal hypospadias ; 18-year-old male type brought up as a girl. (After Neugebauer.)

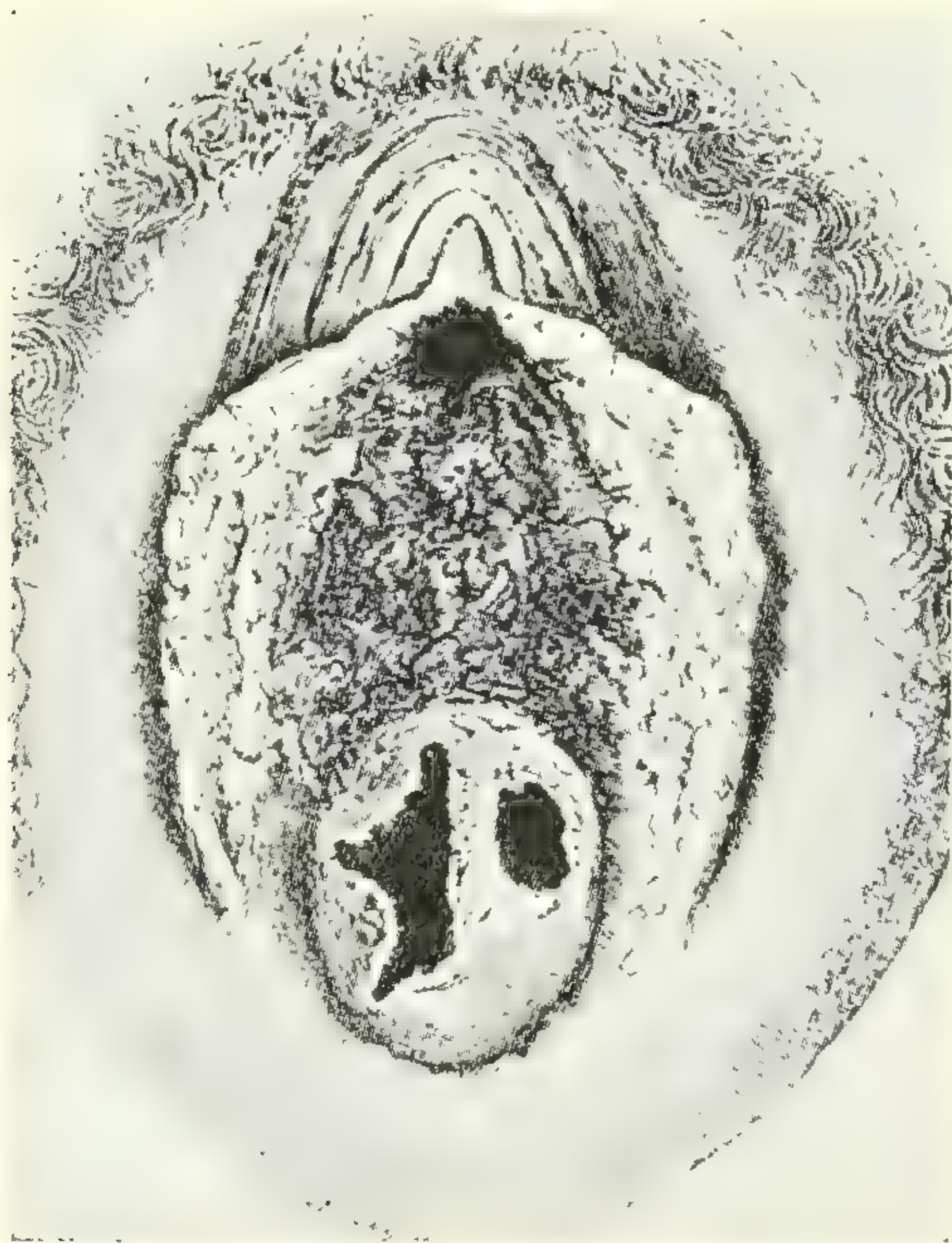


FIG. 54.—Hymen septus with openings of different size. (After Kisch.)



This is specially pronounced in anthropoid apes. The existence of the variety known as *hymen fenestratus* has been shown in the gorilla and U. Gerhardt<sup>2</sup> found the most frequent human form (the *hymen semilunaris* or crescent shape) in a second female gorilla (*cf.* Gellhorn). Again menstruation is



FIG. 55.—Semilunar hymen. (After Kisch.)

FIG. 56.—Slit hymen. (After Kisch.)



FIG. 57.—Fimbriated hymen. (After Kisch.)

FIG. 58.—Circular hymen. (After Kisch.)

hardly an adequate test, though Pliny termed woman “*animal menstruale*.” The differences between *æstrus* (heat) and the monthly period are not so wide and deep that they can serve to prove human difference. Here, too, the anthropoids approximate our species. A periodically regular change in the genitalia of the female chimpanzee has been proved by the observations of Heinrich



Bolau, Ehlers and Otto Hermes, and Robert Hartmann calls this phenomenon a sort of menstruation. The symptoms are, first of all, a dilation and congestion of the exterior genitalia; then the outer lips (Labia majora), which are normally inconspicuous, fold outwards and protrude, and the inner lips and clitoris swell and become very noticeable. These symptoms are not peculiar to the chimpanzee among apes. The same swelling and reddening of the outer genital region and the buttocks as well have been observed in baboons and macaques during their times



FIG. 59A.—A 19-year-old virgin with visible hymen. (Hist. med. Mus., Pachinger.)



FIG. 59B.—The same after defloration, taken over a month later.

of "heat," and there are researches by Pocock of great significance, for he was able to ascertain actual hæmorrhage from the vagina in the species *Papio porcarius*, the Chacma baboon, and *Papio cynocephalus*, the yellow baboon. These hæmorrhages appeared several times at more or less regular intervals, and lasted for four to five days. The loss of blood was quite appreciable. Grabovsky was able to ascertain an almost regular recurrence of sexual excitement at intervals of about four weeks in a female gorilla at the Zoological Gardens in Breslau, but was not certain whether these periodic maxima were accompanied by hæmorrhages from the vagina. We must, therefore, conclude that menstruation is not exclusively and distinctively a human attribute.



[A great deal of work has been done recently on ovulation and menstruation in the primates. Menstruation, or at least a discharge from the uterus, occurs without ovulation, and direct observation of monkeys has furnished a mass of important data. Those wishing to pursue the subject can consult the works of Zuckerman, Parkes and others, in whose contributions they will find lists of further references.]

We shall not detail the countless theoretical attempts which have been made



FIG. 60.—Man and Woman (Adam and Eve) according to a *Biblia Pauperum* in the Tegernsee Monastery. About 1340. (Bayr. Landesbib. Munich. c.l. 1914.)

to degrade and depreciate the special anthropological characteristics of Woman, as compared with those of Man. Suffice it to say that there have been the most arrant misreadings of natural fact—according to the particular cultural climate and institutions in which these speculations took place, and to quote two startling examples—one from the sixteenth century, which abounded in bizarre metaphysical controversies and word spinning, and one from the nineteenth.

The first was anonymous, but attributed to Acidalius, and entitled *Women are not human beings* (*Mulieres homines non esse*), a question already debated at the Synod of Maçon in A.D. 585.\*

\* Valens Acidalius was born in 1567 and died in 1595. Shortly before his death he was the centre of a literary sensation aroused by the dissertation *Disputatio perjucunda qua anonymus probare nititur mulieres homines non esse* . . . (Leipzig, 1595). The work has been translated into French in 1744 and again in 1766.



There is also an address by Paul Albrecht, delivered at an anthropological Congress at Breslau in the year 1884, in which he maintained the more pronounced animal traits as seen in female human anatomy. He said :

“ There are so many proofs that the female sex is the more persistently true to ancestral type, *i.e.*, the closer to our savage forbears. These proofs include the following characteristics :



FIG. 61.—Man and woman from the Missal of B. Furtmeyer, 1481. (Bayr. Landesbib. Munich, *c.l.* 15709.)

- “ (1) The shorter stature of women.
- “ (2) The higher index of dolichocephaly, which is more frequent among women.
- “ (3) The more pronounced and frequent prognathism.
- “ (4) The greater size of the median incisors.
- “ (5) The *trochanter tertius*, which is specially developed in women.\*

\* *Cf.* the plaintive question by Dello as to why man has lost the third trochanter, and for other material see Waldeyer<sup>11</sup> and Fürst.



“(6) The less frequent synostosis of the first coccygeal and lowest sacral vertebræ in women.

“(7) The fact that five is the more frequent number of coccygeal vertebræ in women.

“(8) The greater frequency of hypertrichosis (excessive growth of hair) in women.

“(9) The corresponding infrequency of baldness among women.”

The comparative variability of the sexes cannot be finally decided as yet ; our knowledge of the effective range of variation in physical qualities alone is not



FIG. 62.—Man and woman from a MS. of Boccaccio in the Bayr. Landesbib. Munich, c.g. 6. French School.

sufficiently exact and detailed. The investigations of Giuffrida-Ruggieri suppose that women possess greater variability. Ranke is of opinion that deformities occur more often in women than in men ; but, in certain organs, they are more frequent among men.

The æsthetic and ideal aspects of women's bodies have naturally been dealt with inexhaustibly. And again, many of the distinctive differences between women and men in physique are just those which appear especially desirable and lovely to men, when these are fully developed and delicately differentiated. What are these particularly typical and characteristic attributes ? We must clear our minds on these points before studying their racial and ethnographical variations.



### 3. THE ACCESSORY SEXUAL CHARACTERISTICS

#### (a) Figure and Build

In Figs. 60-72 we have reproduced certain typical representations of the "ideal man and ideal woman" as imagined and depicted in various ages and among different races; these figures accentuate the typical, secondary sex characteristics very clearly. Perhaps the most externally conspicuous and certainly one of the most



FIG. 63.—Man and woman. Adam and Eve. Boxwood. K. Meit. c. 1520. Gotha Museum.

important of these secondary characteristics in woman is the bosom, concerning which we shall have to deal in detail in a later chapter. But there are many other attributes, based on the greater fatty layer (adipose tissue) and the less pronounced muscular development, the position and influence of the internal organs and the skeletal framework, which is both less massive and less closely knit.

The once-famous Berlingy nœcologist, Wilhelm Heinrich Busch, gave the following descriptive summary of the "secondary" differences in appearance between men and women.



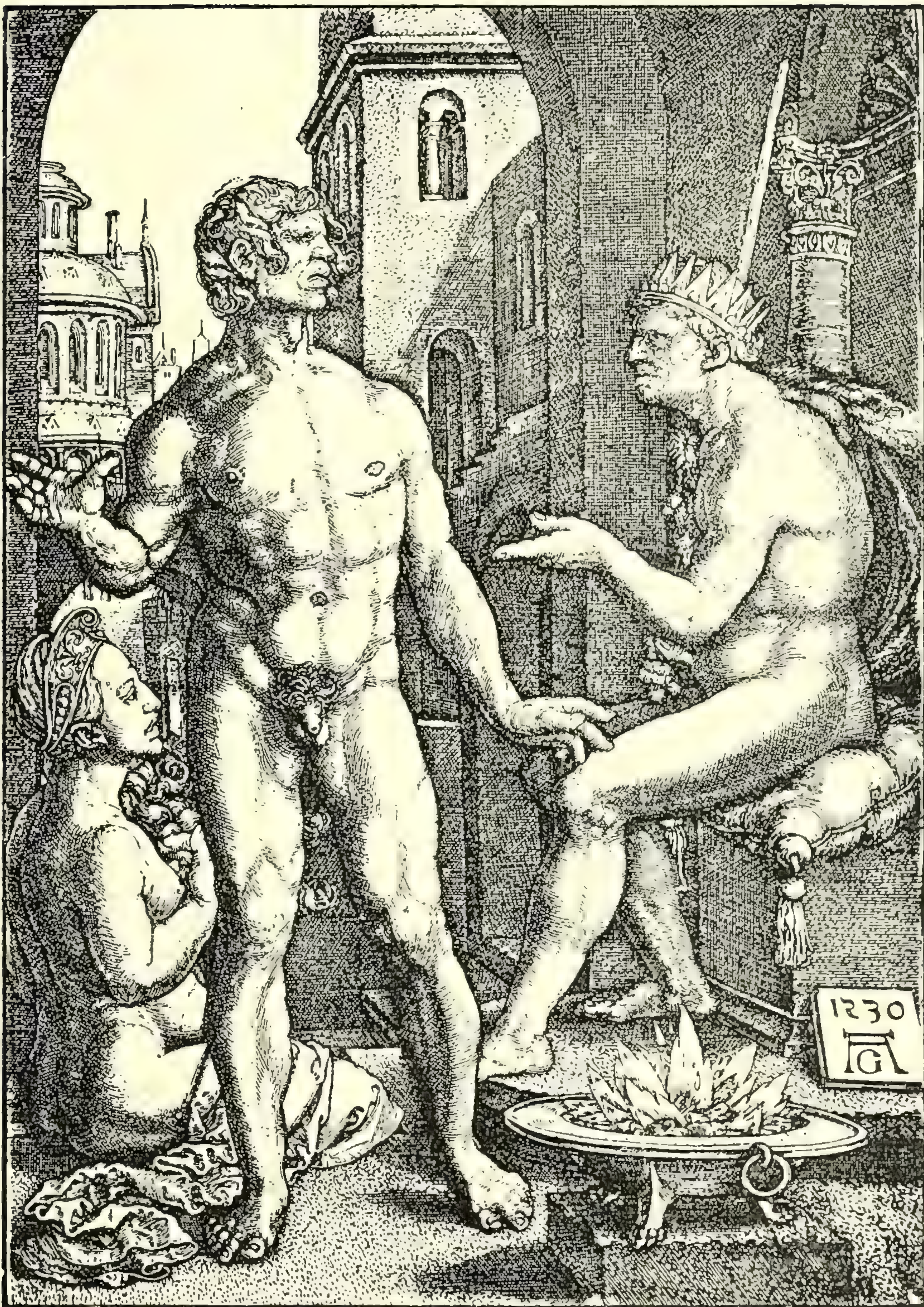


FIG. 64.—Man. Aldegrevier. (c. 1502–1555.)

“The external appearance of woman is more conformable to harmony and beauty than that of man (in masculine eyes)—her proportions are at once rounder and more delicate; whereas the man’s are angular and rough hewn (only not in feminine eyes). In women, the shape of the skull approaches the spherical; it has fewer and slighter ridges and protuberances





FIG. 65.—Woman. Aldegrever. (c. 1502–1555.)

than the man's and the dense and often long growth of hair can be one of the chief charms of women. The length of the face, from brow to chin, is less—relatively as well as actually. The



single features are less pronounced and the lines more flowing and less angular. The expression is apt to be less definite and even tends to insipidity. The forehead is lower, the nose and mouth smaller, the chin much smoother and, at the same time, less pointed, so that the whole face is at once smaller and rounder. In women, the neck is comparatively longer than in men and the lines of head, face and shoulders flow more gradually and softly into the neck than in the man; the 'Adam's apple' is less prominent. The trunk of the body is differently proportioned; the lower portion outweighs the thorax. Her shoulders and ribs are much narrower than the man's; her ribs are in a line with the pelvis, whereas the man's project beyond his. The female pelvis is very much wider than the male, and the muscles of lower abdomen, flanks and buttocks are sheathed in connective tissue and covered with flesh and fat, giving a much softer outline



FIG. 66.—Man and woman. Matham. c. 1600.

and smoother surface. Ribs and hip bones are much less evident to the eye. The upper part of the trunk—the actual thorax—would appear disproportionately small in comparison with the dominant pelvis were it not for the development of the bust, with the mammary glands, and their sheaths of fatty tissue. Thus, in woman, a firm, symmetrical and adequate development of the bosom is necessary in order to balance the pelvis and is equally pleasing to the eyes and beneficial to the race. . . .

“The female abdomen in its lower portion is more rounded than the man's and slightly protrudes. The depression of the navel is deeper than in man, and, at the same time, further above the pubis. The thorax narrows gradually below the bosom and then the outline curves again into the pelvis, whereas, in man, the massive thorax narrows abruptly into hips and loins. The female form is most slender just above the loins, *i.e.*, at the waist. The collar-bone is shorter, the arms shorter, rounder and more plump, and the fingers narrower and more



pointed. The beauty of the arms in women depends on a certain fleshy fullness and roundness. The breadth and flesh of the hips are continued into the thighs; the muscles of the upper thighs are very strongly developed in comparison with the others; the trochanters are widely separated and the thighs slope gradually inwards and downwards. The knees approach each



FIG. 67.—Married couple from the Andaman Islands. (After v. Reitzenstein.)

other and the inner surfaces nearly touch. The knees themselves are round and without the strongly marked masculine muscles. The calves are slenderer and taper more definitely towards the lower extremity. The ankles and bones of the feet are less prominent and the feet relatively, as well as actually, smaller and narrower than man's; the whole body is supported on a frailer basis and legs are notably less long and straight than man's. In the male form, the pubic bone divides the body into equal halves; in the female, the pubic bone is below the middle of the



body. Thus, women take shorter steps in walking than men and their gait is apt to sway slightly. This may be able to give a peculiar grace of movement, but the normally built woman is not well adapted for running.” \*

There are two great differences in the whole organic life of women from that of men. First, women are primarily much more concerned with and specialised for



FIG. 68.—Caroline Islanders from Fais. (After Külz.)

reproduction than men ; they have to deal with menstruation, pregnancy, childbirth, suckling and the care of children. And, beyond this complex reproductive function, their whole nervous system is differently keyed ; their emotions are predominant

\* The Illustrations 73 to 77 show characteristic types of feminine physique, taken from women in various parts of the world.



and their mental and cerebral activity is less. This difference shows in all movement and action : the women whose range of feeling is greatest and whose sensibilities are tenderest are those who—generally—appear to men as most completely women.

(b) Accessory Sex Characteristics further considered, especially as shown in European Women

Perhaps the most obvious and constant difference here is *the relative size of the body* in the sexes. Pfitzner made full measurements among Alsatian men and women



FIG. 69.—Fuegians. (Mission scient. du Cap Horn.)

between the ages of 20 and 50 years. The ratio of *stature* was as 100 (in men) to 94 (in women) ; and the length of the trunk (as distinct from the lower limbs) was 100 (in men) to 94.4 (in women).\*

Thus there is a typical difference not only in actual height and size, but in the

\* The mean statures of certain racial groups represented in the United States and published by Martin in 1928 may be of interest.

Group	♂ cm.	♀ cm.	Group	♂ cm.	♀ cm.
Japanese . . .	159.3	147.2	Germans . . .	169.2	158.0
Polish Jews . . .	161.0	150.6	Finns . . .	171.0	160.0
French . . .	164.1	157.0	Norwegians . . .	172.0	162.4
S. Russian Jews . . .	165.1	153.6	Sioux . . .	172.6	159.5
Danes . . .	169.1	159.2	English (middle class) . . .	172.8	159.9



relative proportions of limbs and trunk ; a difference, not accidental, but primary. Johann Ranke<sup>2</sup> says :

“The characteristic differences in the man are as follows : His trunk (thorax and abdomen) is slightly shorter in proportion to his whole stature than the woman's ; and his limbs and extremities, legs, arms, hands and feet are longer in proportion both to his whole height and his trunk. His lower limbs are distinctively longer in proportion to the upper half of his body and his shins, and arms from the elbow downwards, are longer compared with the thighs and upper arms, than hers. In proportion to his whole height, the horizontal circumference of his head



FIG. 70.—Secondary sexual characteristics at puberty. (After Neugebauer.)

and face is somewhat less. In short, the distinctively masculine proportions are more those of the adult and the distinctively feminine more those of the infant.

“In this particular respect, the line of human anatomical evolution has advanced further in man ; woman has remained on a less differentiated level. There are, it is true, other typical feminine characteristics as well, but we may say, as the result of our investigations, that the far greater muscular and *motor* activity of the man in the white races of Western civilisation is based on and develops a more powerful and highly differentiated bodily mechanism than the woman's.” And the same is true of the rural agriculturists of Europe, as was shown by two pupils of Stieda, who measured many Lettish and Lithuanian peasants. These Lettish and Lithuanian results showed the same tendencies, but, as might have been expected, to a somewhat less degree ; for there is no doubt that hard and continuous muscular exertion from



childhood will develop a somewhat masculine texture of body and proportions approaching the masculine.

But the normal and typical feminine proportions are constant even among the most primitive peoples, and are the same as in European races, *i.e.*, there is a closer structural resemblance to children in women than in men.

Weissenberg<sup>5</sup> does not attribute the typical womanly build either to "arrested



FIG. 71.—Man and woman. German. (Photo, R. A. Giesecke.)

development" or to shorter stature and lesser bulk. but after exhaustive measurements he has concluded that both sexes follow their own specialised course of development.

The differences in the limbs affect arms as well as legs. Weisbach<sup>2</sup> came to the following conclusions as regards the German women :

"The whole arm is shorter in women, so are the separate sections (from shoulder to elbow and elbow to wrist). But the hands and the back of the hand and middle finger are *comparatively* longer, though actually shorter and narrower than in men. The legs, shanks and feet are all shorter, but the thighs comparatively long ; the foot itself being wider."



Goenner declares that even at birth, girls have smaller feet than boys.

Sappey is of opinion that, in women, the trunk and lower extremities are about equal in length, but that, in men, the lower limbs are about 2.5 cm. longer than the trunk. He further declares that men reach their maximum growth at 30 and their maximum weight at 40 years of age, the woman's maximum weight being reached at 50. The average weight of men is given as 62.049 kg., and that of women as 54.877 kg. Lopicque, quoting Vierordt, gives the averages as 66 kg. and 54 kg.

The bony framework of the chest shows sexual differences as well as the external

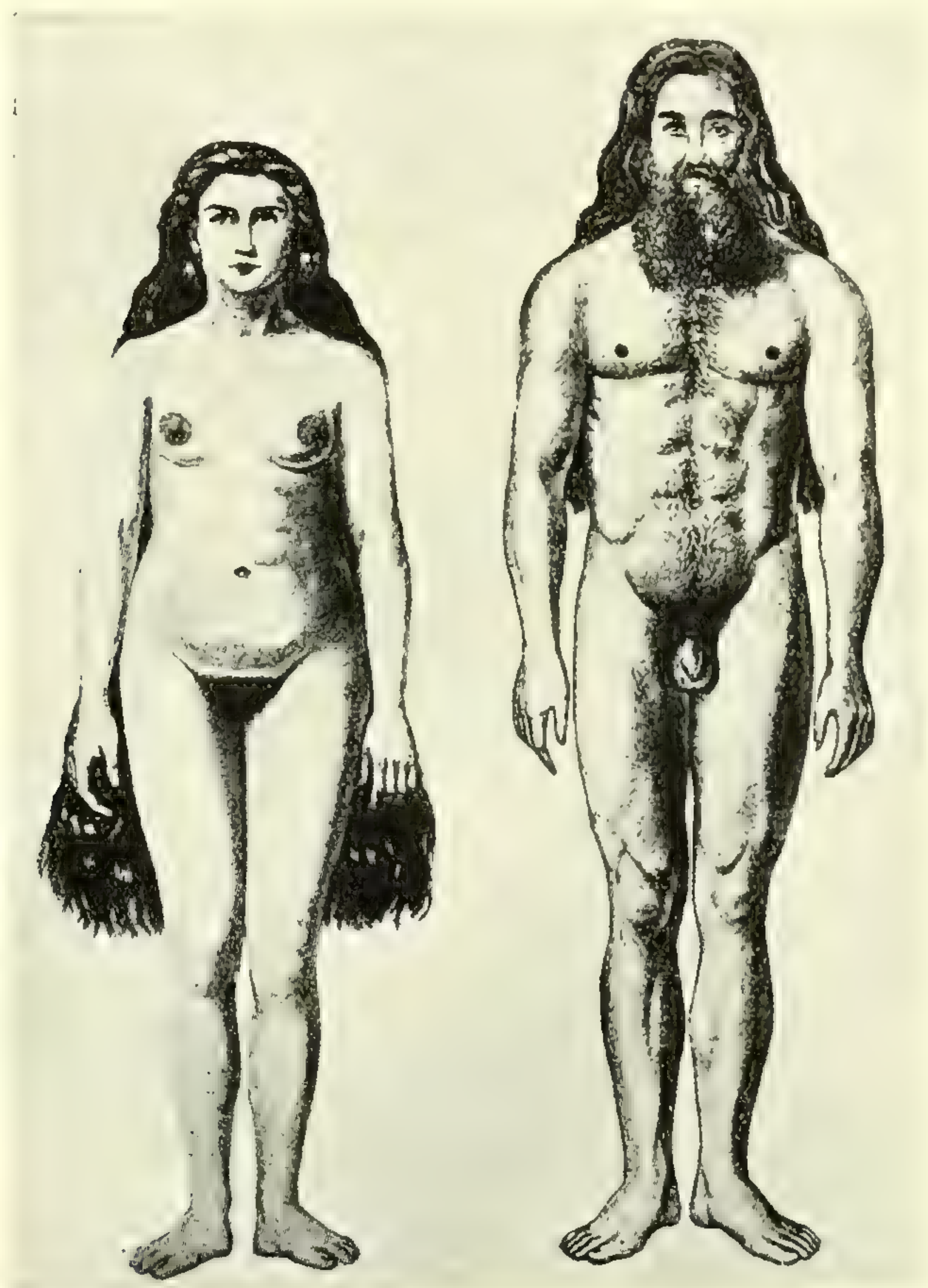


FIG. 72.—“Ideal” figures in a man and woman of Caucasian race. (After Friedenthal, *Haarkleid des Menschen*.)

contours (Fig. 78). The thorax in women is less roomy and narrower and the respiration is less vigorous and expansive.

A century ago Ackermann described the main characteristics of the thorax in woman. The cartilaginous portion of the lower ribs is comparatively larger than in man, according to this writer, and the lower extremity of her breast bone is either in a straight line with the bony portion of the fourth rib or extends somewhat further down, whilst the breast bone itself is actually smaller, on the whole, than in man. In the famous work of Sömmering<sup>3</sup> against the habit of tight lacing, he reproduced the statue of the Venus of Milo and drew a corset on it in order to show how harmful such a custom can be.

There is a general assumption that the extreme slenderness of the waist in woman is not only beautiful but natural. Baelz<sup>4</sup> shows the error here. There is a



certain degree of natural "waist" in human bodies above the arch of the hip bone (*cf.* Fig. 84). In some men this is quite pronounced, and there are a certain number



FIG. 73.—Young Singhalese girl. (After Stratz.)

of women whose shoulders are wider than their pelvises. Weil<sup>2</sup>, etc. has recently argued that both great pelvic breadth in men and great width of shoulder in women are caused by imbalance of the internal secretions, and may be associated with



homosexuality. He declares that, in normal men, the ratio of shoulders to hips is as 100 to 93, and, in normal women, as 100 to 97. Whereas in the undoubtedly homosexual cases measured by him, the male inverts showed the ratio 100 to 95, and the women 100 to 94.

The natural waist is formed not only by the pelvic bones but by the tapering



FIG. 74.—Spanish girl whose hips exceed her shoulders in breadth. (From a photograph.)

of the lower thorax, and by the “floating” lowest rib. If the tenth rib on either side is not attached to the breast bone, so the lower portion of the thorax becomes more easily compressible and very sensitive to pressure. Baelz has emphasised the comparative rarity of this abnormality, and its existence in both men and women. Women with firm ribs and good bone development, even in the days of tight lacing, got off more lightly than their sisters with rachitic bones and floating



lower ribs. It is said that the floating tenth rib is comparatively frequent in the Yellow Races. And we know, too, that there are women with virtually no perceptible waist curve, as, for instance, in the photographs reproduced in this book of the Korean girls (Fig. 79), whereas the Japanese (Fig. 80) has a distinct natural



FIG. 75.—Queensland native showing thick body hair. (Photo, H. King, Sydney.)

waist. Baelz points out that in the most artistic epochs known to us, the waist was not particularly accentuated nor admired, as is proved by the Greek statues of nymphs and goddesses and the women portrayed by Raphael and Titian. Even the Romanesque and Gothic sculpture of the Early Middle Ages sometimes showed no compression of the waist (see Figs. 81, 82, and *cf.* Figs. 83 and 84).





FIG. 76.—Mixed blood. Vedda and Singhalese. (Photo, R. A. Giesecke.)



Further detailed measurements on the bodies of both men and women have been made by Liharczik. He finds that, in general, the female body is shorter by about 1 cm.—that is, by the breadth of a rib—in the region of the thorax. All the other distinctive differences in proportions may be deduced from this one (*e.g.*, the shorter trachea and higher vocal pitch of woman, her wider pelvis, and so on).

Wintrich measured the chest circumference of many persons of both sexes and in various

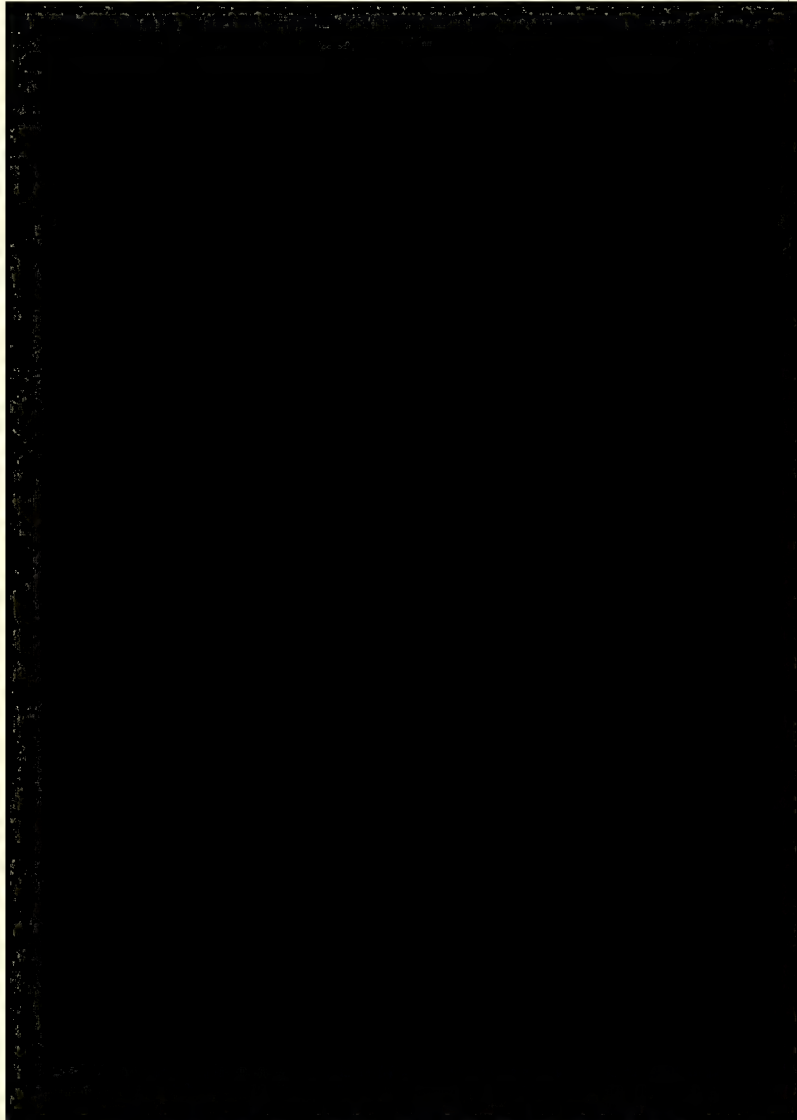


FIG. 77.—German girl. (Photo, R. A. Giesecke.)

usages and compared the results in three sets of measurements, *i.e.*, round the top of the chest, the middle and the base. He found interesting results. Until advanced age, the upper chest measurement exceeds the lower in both sexes. After 60 years of age, these proportions are reversed. In women, even in youth, the upper measurement exceeds the lower to a lesser degree, proportionately, than in men. At about 14 years of age, the male ribs and thorax become much the wider and more massive.

We owe further facts to Lenhossek, who found the collar bone less strongly curved in women than in men. Strauch investigated the sternum (breast bone) in greater detail and



found that, in women, the manubrium or upper piece was relatively larger and the body smaller than in men. This difference influences both position and function of the lungs and heart, as Henke has shown. The feminine structure of the thorax in the region of the xiphoid cartilage may have been affected or accentuated by the pressure of stays and constriction of tight lacing. The general effect has been an inward pressure of the sternum and costal cartilages, while the

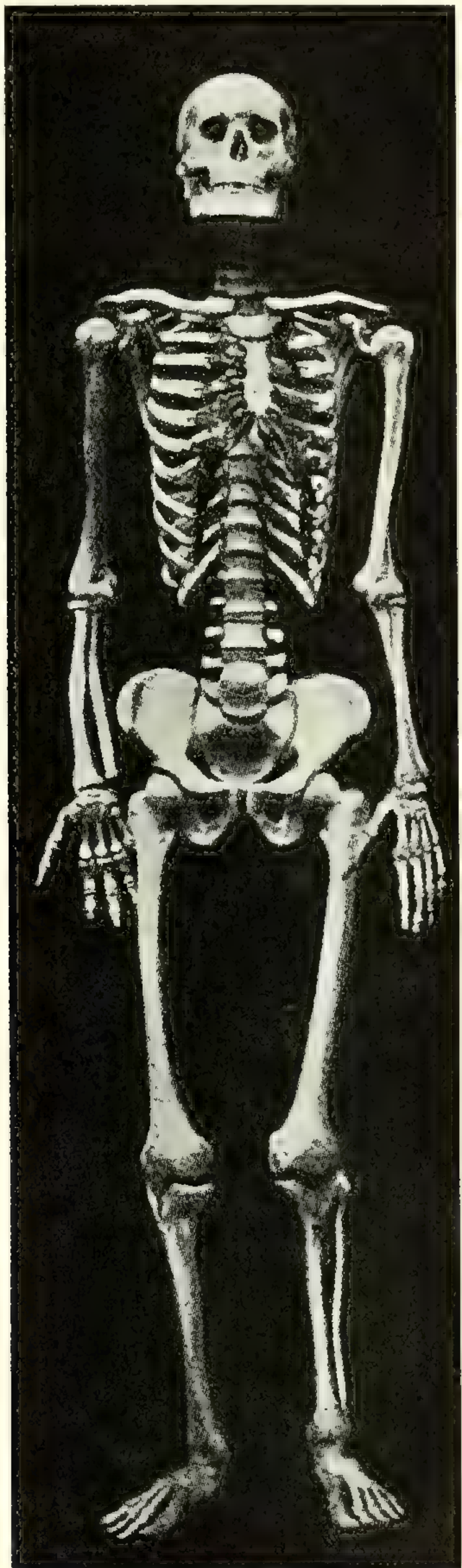


FIG. 78A.—Male skeleton.  
(After Stratz.)

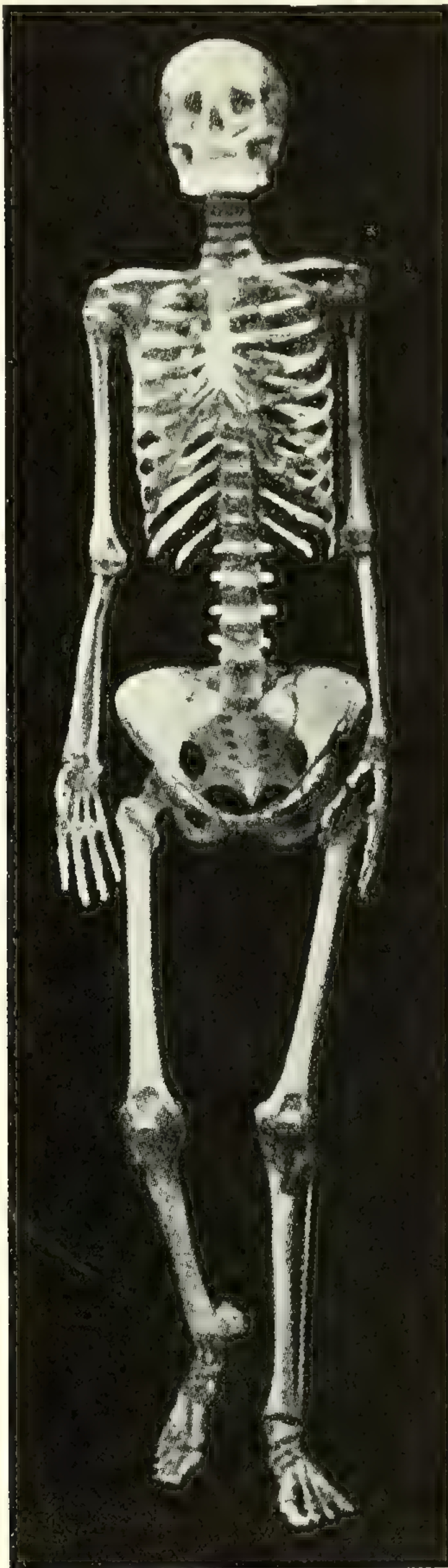


FIG. 78B.—Female skeleton.  
(After Stratz.)

relative proportions of the thoracic cavity, containing lungs and heart, have not been greatly altered.

[Before passing on to a consideration of the skeleton a few words may be said on the general question of the bodily proportions of women. In 1924 a series of measurements were taken by Wilder and Pfeiffer of 100 students of Smith College in the United States, and the results tabulated and compared with other data from



other countries where similar inquiries had been undertaken. The subjects were all young, ranging from 17 to 27 years of age, the mean being 20·4 years. The measurements were mainly of the kind usually taken by anthropometrists, and no attempt was made to examine other somatic features of interest to the physical



FIG. 79.—Korean girls showing absence of “waist.” (After Baelz.)

anthropologists. Nevertheless, the work is valuable as far as it goes, and might be usefully consulted when more detailed examinations are undertaken.]

We will now consider the chief portions of the *bony structure*, and begin with the *skull*.

But certain general remarks, summaries, and reservations must here be borne in mind.





FIG. 80.—Japanese girl showing natural “waist.” (After Baelz.)



FIG. 81.—Adam and Eve. From a MS. in the Landesbibliothek, Munich, 12th–13th century.



At one period in the development of anthropology and comparative anatomy, scientists were ready to set up standardisations and generalisations based both on measurement (Cranio-metry) and general description—often deductive description. Some are so still. And the processes of proof were often inadequate: for instance, measurements were taken on sets of male and female skulls respectively which were numerically insignificant and far too few to be representative. Again, some authors have ascribed skulls to whichever sex they thought



FIG. 82.—Eve. From B. Furtmeyer's Missal, 1481. (Bayr. Landesbib., Munich, *c.l.* 15710.)

probable or suitable. Both the actual general differences between the skulls of men and women are, therefore, far from certain and the amount of such differences, even less so. There are, however, certain researches in this field, such as those of Welcker,<sup>5 6</sup> J. Ranke,<sup>2</sup> Weisbach<sup>1</sup> and A. Ecker,<sup>1 4</sup> whose results may be considered reliable, either wholly or in the main.

Two specialists, Rebentisch (at Schwalbe's Institute in Strasbourg) and Paul Bartels (at Waldeyer's laboratory in Berlin), have endeavoured to establish the characteristic cranial differences between male and female, basing their studies





FIG. 83.—Modern woman without corset.





FIG. 84.—Modern woman without corset. (Römmeler & Jonass.)



on a large amount of anatomical material and on the consideration and verification of already recorded data.

Rebentisch's researches were based on 169 skulls belonging to persons whose sex was definitely known. Of this material, 124 skulls were those of men, 45 of women. P. Bartels worked from a collection of 40 Berlin specimens of either sex and 22 Malay to establish certain points, while testing and verifying other measurements by reference to statistics given in craniological literature. Thus, we may say that for many special points, Bartel's material included 1,090 skulls, of which 685 were those of men, 405 of women.

The statistical material used included the cranial catalogues of the Anatomical Departments of the Universities of Königsberg (102 ♂, 37 ♀), Munich (22 ♂, 7 ♀), Strasbourg (34 ♂, 18 ♀), Freiburg and Heidelberg (73 ♂, 37 ♀). Also, the published observations of Joh. Ranke on the old Bavarian rural population (based on 100 ♂, 100 ♀); of Kopernicki, on gipsies (15 ♂, 5 ♀); Sarasin on the Vedda of Ceylon (21 ♂, 11 ♀); and Koganei, Kopernicki, and Tarenetzky on the Ainu (123 ♂, 86 ♀). Further on various Malay measurements (77 ♂, 22 ♀) and on statistics of B. Davis, on Hindu (18 ♂, 14 ♀) and "Mussulman" skulls (11 ♂, 50 ♀).

There were also some small sets of Polish, Russian, Dutch, Singhalese and Australian Aboriginal specimens, together with the aforesaid material from the Berlin Institute of Anatomy.

The use of cranial series from different ethnical sources was of help in various ways. It was possible to test the degree and direction of sexual differences in different races (a subject we shall discuss more fully in a later chapter). It was also possible to arrive at general conclusions with greater certainty, when particular sexual differences were found among all or most of the races in question. We might then fairly assume that chance was not the true explanation, but that we had to do with a widely and deeply based biological fact.

## A. FACIAL PORTION OF SKULL

### I. Lower Region, Masticatory Apparatus

(1) *Mandibular Joint*. According to Thiem, the space immediately below the auditory meatus of the ear, the so-called fossa typanico-stylo-mastoidea, is appreciably larger in woman than in man. The male mandibular joint is, therefore, more strongly constructed.

(2) *Angles of the Mandible or Lower Jaw*. These are sharper in man, according to Ackermann, Weisbach,<sup>1</sup> Welcker<sup>6</sup> and Ranke<sup>2</sup>; Huschke maintains the reverse.

(3) *Distance between the Angles of the Mandible*. Less in woman, according to Welcker.<sup>6</sup>

(4) *Chin or Mental Protuberance*. Simpler in structure in woman (Schaafhausen<sup>4</sup>).

(5) *Alveolar Arch*. More circular in woman (Huschke); in man (Ackermann, Schaafhausen<sup>1, 4</sup>).

(6) *Alveolar Prognathism*. Greater in women (R. Virchow).

(7) *Upper Median Incisor Teeth*. Schaafhausen<sup>1-3</sup> finds that these are conspicuously larger in women. Parreidt<sup>1-3</sup> contradicted this, basing his different view on measurements of 100 men and 100 women. P. Bartels also could not confirm Schaafhausen. M. Bartels, however, concurred with the latter. This often gives a peculiar character and even charm to the physiognomy, but it is not considered a sexual characteristic (Figs. 85 and 86).

(8) *Size and Weight of Mandible*. There is general agreement that both are greater in man. According to Morselli, the difference in actual weight amounts to 17 grammes. Moreover the relative weight of the lower jaw in comparison with the skull is greater in the man, as has been pointed out by Morselli and confirmed by Gurrierie, Masetti, Rebentisch and P. Bartels.

### A. II. Nasal Region

(9) The nose is smaller in woman (J. Ranke<sup>2</sup>). P. Bartels only found the *absolute* width and height of the nose greater in man, and Elkind subsequently came to the same result after careful measurements and comparisons on 226 male and 149 female Polish subjects from the basin of the Vistula.





FIG. 85.—Large median incisors in a Japanese girl.



**A. III. Orbital Region**

(10) The relative size of the sockets is greater in woman (Huschke and Welcker <sup>5</sup>). But J. Ranke <sup>2</sup> and Mantegazza <sup>6</sup> claim that they are larger in man.

(11) *Processus Marginalis*. Panichi found certain differences, and Allen estimates the



FIG. 86.—Large median incisors in a young girl from Biskra. (After C. Müller.)

width of this portion so much greater in men that he finds these measurements one of his chief diagnostic tests.

**A. IV. General Proportion of the Face**

(12) *Size of the Face*. Here the results obtained by E. Schmidt <sup>10</sup> and Mantegazza <sup>6</sup> are in contradiction. P. Bartels came to the conclusion that all the facial dimensions were smaller in women than in men. Pfitzner subsequently measured 1096 men and 867 women from



Lower Alsatia and found the women's faces proportionally wider, thus resembling those of children.

(13) *Ratio of Face to Cranium*. Sömmering,<sup>4</sup> Ackermann and nearly all later investigators say that the face in woman is relatively smaller compared to the cranium.

## B. CRANIAL PORTION OF SKULL

### I. Frontal Region

(14) *Orthometopon* (Ecker). Ecker has drawn attention to a certain characteristic of the cranial profile in women, due to the relatively straighter and more vertical line of the brow.

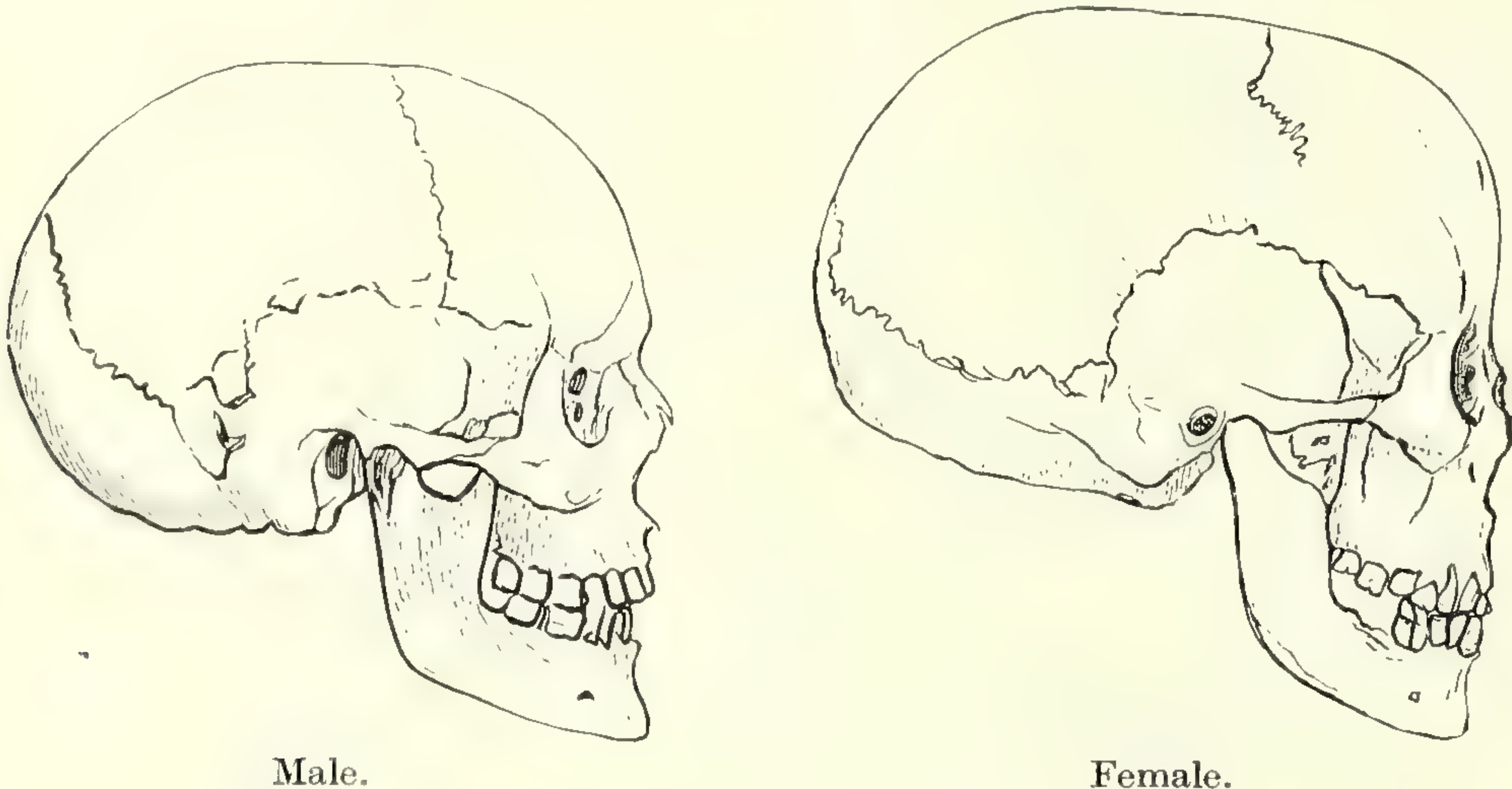


FIG. 87.—Sexual differences in the skull. (After Ecker.)

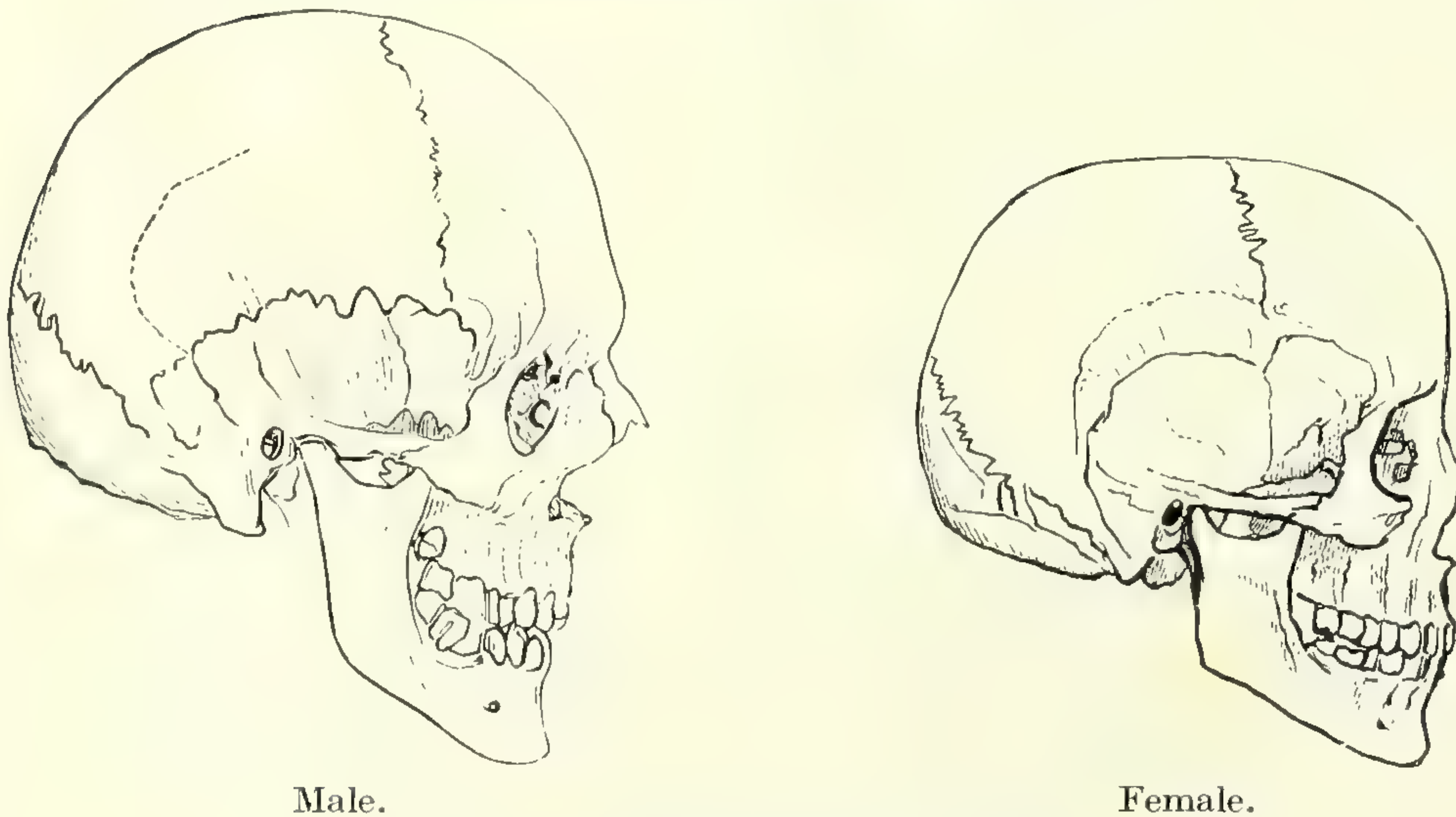


FIG. 88.—Sexual differences in the skull.

In his own words : “ In attractive feminine heads, we become aware of this peculiarity ; the forehead rises steeply and then passes into the much flatter crown of the head, typical of woman. Then the crown drops rather abruptly into the line of the neck at the back.” He calls it *Orthometopon*.

Illustrations 87 and 88 have been borrowed from Ecker, and show the outline described above. But, according to Bartels and Ranke, this characteristic is uncertain.



(15) *The Temples* are more prominent in woman, according to Mantegazza,<sup>9</sup> Broca,<sup>2</sup> E. Schmidt,<sup>11</sup> and others. E. Schmidt calls this "a physiognomically characteristic trait, reminiscent of the infantile skull."

(16) "*Ligne sus-orbitaire.*" Broca<sup>2</sup> finds this lies higher in man.

(17) *Glabella*. Ackermann emphasised the strong development of the glabella as typically masculine.

(18) *Superciliary Arches*. According to Ecker,<sup>1</sup> Mantegazza,<sup>9</sup> J. Ranke,<sup>1</sup> and others, these are more pronounced in man.

## B. II. Parietal Region of the Skull

(19) *Parietal Tuberosities*. According to Mantegazza,<sup>9</sup> Schaafhausen,<sup>1, 4</sup> and others, these are more pronounced in woman, as in children.

(20) *Convexity of Parietals*. According to Ecker<sup>1</sup> (cf. Figs. 87 and 88), the parietal region is flatter in woman. P. Bartels found this was apparently the case in both his German and Malayan material.

(21) *General Size of Parietal Bones*. Greater in man, both absolutely and relatively, according to Ackermann and Weisbach.<sup>1</sup> P. Bartels found the absolute measurements of the *foramina* greater in man, but, *relatively*, there were discrepancies. In proportion to the *width of the skull*, from side to side, these parietal measurements were smaller in the male German skulls and larger in the male Malay skulls. We have, therefore, here, no *unequivocal* results.

## B. III. Occipital Region of the Skull

(22) *Occipital Protuberance and Crest*. Prominent in men, slight in women, according to Ecker, Welcker, Weisbach, Broca,<sup>2</sup> Mantegazza,<sup>6</sup> and others. The same results were found in German skulls by Rebentisch and Paul Bartels. But there are evidently racial peculiarities here (Broca and P. Bartels), so the diagnostic significance of prominent or flat occipital ridges must not be over-estimated.

(23) *Mastoid Processes*. When strongly developed these have often been considered typically male. P. Bartels expresses himself with considerable scepticism on this point. Broca's test, so-called, judged a skull to be masculine if it rested on its base with the two processes (and not the occiput) on a plane surface. But, as P. Bartels proved, this rule has exceptions. Among his 38 German female skulls, the processes were sufficiently developed to pass Broca's test in four cases; and, among the five Malay women's skulls, in one case. Therefore, Broca's test is unreliable.

(24) *The Occipital Condyles* are, however, narrower and less massive in woman (Sömmering,<sup>5</sup> Broca<sup>2</sup>).

(25) *Styloid Processes*. These are more pronounced in man. This has been confirmed by Broca,<sup>2</sup> E. Schmidt,<sup>11</sup> Panichi; also by P. Bartels and Rebentisch, who had very definite results.

(26) *Foramen Magnum*. Smaller in women (Mantegazza,<sup>9</sup> Popov, Panichi). According to P. Bartels' measurements, this is the case both absolutely and relatively to the *cranial capacity*. (The so-called *Index Cephalospinalis* of Mantegazza.)

## B. IV. General Characteristics of Cranium

(27) *Relative Proportions of Vault and Base*. The upper portion dominates in woman, as in children (Ecker, Welcker,<sup>5</sup> Mantegazza,<sup>6</sup> J. Ranke,<sup>1</sup> and others).

## C. GENERAL CEPHALIC CHARACTERISTICS

(28) *Weight of Skull*. Greater in man (Sömmering and others; also according to P. Bartels' investigations). Weisbach and, subsequently, E. Ardu Onnis investigated comparative weights and measurements; they wished to ascertain whether the results would be the same if the bones were of equal size in women.

They used the so-called *Index baro-cubicus*. In most cases investigated, P. Bartels arrived at a similar conclusion, namely, that the woman's skull has a relatively slighter weight and, there-



fore, relatively more fragile bony structure. Weisbach<sup>1</sup> found in German women 2640 c.c. to 1 gm. of cephalic weight, and in men 2620 c.c. to the gramme.

(29) *Ratio between Weight of Skull and whole Skeleton.* According to Sömmering,<sup>4</sup> this is as 1 to 8 in men, 1 to 6 in women. Welcker<sup>5</sup> doubts this result.

(30) *Cephalic Contents.* Absolutely greater in man. There is general agreement here. But we must consider the weight of the brain independently.

(31) *Horizontal Circumference.* Here, too, it is universally agreed that the measurements are larger in man. But, according to P. Bartels' carefully collected and recalculated figures, the relative size, in proportion to height of body, is greater in woman. (See below, in the section on the Weight of the Brain.)

(32) *Diameter and Indices.* Length, breadth and height, everywhere greater in man.

(33) *Prognathism.* Great differences of opinion. According to Welcker,<sup>5</sup> greater in man; according to Weisbach, in woman. Dureau has collected many contradictory statements. It appears impossible to decide the matter on the available material.

(34) *Muscular Attachments.* More powerful in man. General agreement prevails here.

(35) *Variability.* According to Weisbach,<sup>1</sup> Mantegazza<sup>9</sup> and E. A. Onnis, this is less in woman. Giuffrida-Ruggeri maintains the exact contrary, basing this view on bodily measurements tested by Camerano's method.

If we now summarise the reliable results at our command, the answer to our inquiry as to the nature and amount of the differences in the skull of men and women respectively may be formulated as follows (P. Bartels<sup>2</sup>).

(1) *There is no point of difference so typical, conspicuous and fundamental as to permit us to recognise every single specimen as masculine or feminine, as the case may be.* After the vain attempts to discover and standardise any such absolute difference, we may consider it non-existent.

(2) *All the recognised and recorded characteristic differences are not differences between all and any individual skulls; they are matters of the majority and of statistical averages.*

(3) *In judging the sex to which any specimen skull belongs, we must take all its parts and its general proportions into account.* Any average characteristic of either sex may be more or less pronounced, or may be imperceptible; and Broca observed that they "*ne valent que par leur ensemble.*"

(4) The particular points of difference which most often and most definitely characterise men's skulls are, primarily, *their greater size.* To enumerate details:

(a) *The bony structure of the male skull is both absolutely and relatively larger and heavier; they weigh more (Index baro-cubicus)—and have thicker muscular attachments.*

(b) *The male skull has an absolutely greater but relatively smaller internal measurement and circumference.*

(c) *The foramen magnum in men is both absolutely and relatively larger.*

(d) *The face is both absolutely and relatively larger.*

(e) *The absolute diameter of the skull is noticeably larger.*

The typical masculine cephalic traits may be regarded as part of the greater size and solidity of the whole bony structure of the male body. There are certain further typical differences which are less easily accounted for, but equally pronounced as follows:

(f) *The more powerful jaws—upper and lower—of man.* This characteristic difference is very marked and is based on the absolutely and relatively greater weight of the mandibular joint and sharper angle of the jaw.

(g) *The heavier superciliary arches and glabella in man.*



(h) *The greater development of the vault of the skull in comparison with its base is characteristic of woman.*

(5) *From the above we may sum up the average female cephalic characters (cf. Figs. 87 and 88). Both Ecker and Weisbach are agreed that in woman :*

*The skull is smaller, lighter in weight, more fragile in structure : the muscular attachments, the superciliary arches and the glabella are less pronounced, the bones of maxilla and mandible are less massive, the facial area is relatively smaller and slighter*



FIG. 89.—Sexual differences in the pelvis. (After Hoffmann.)

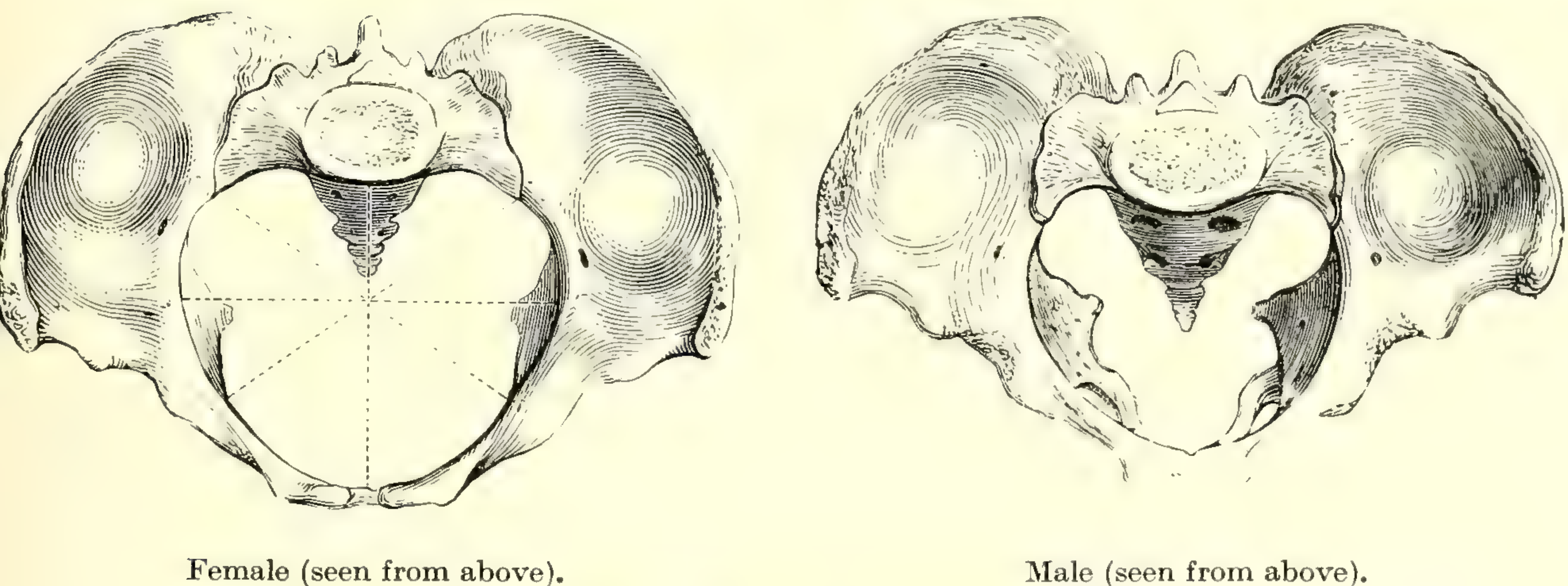
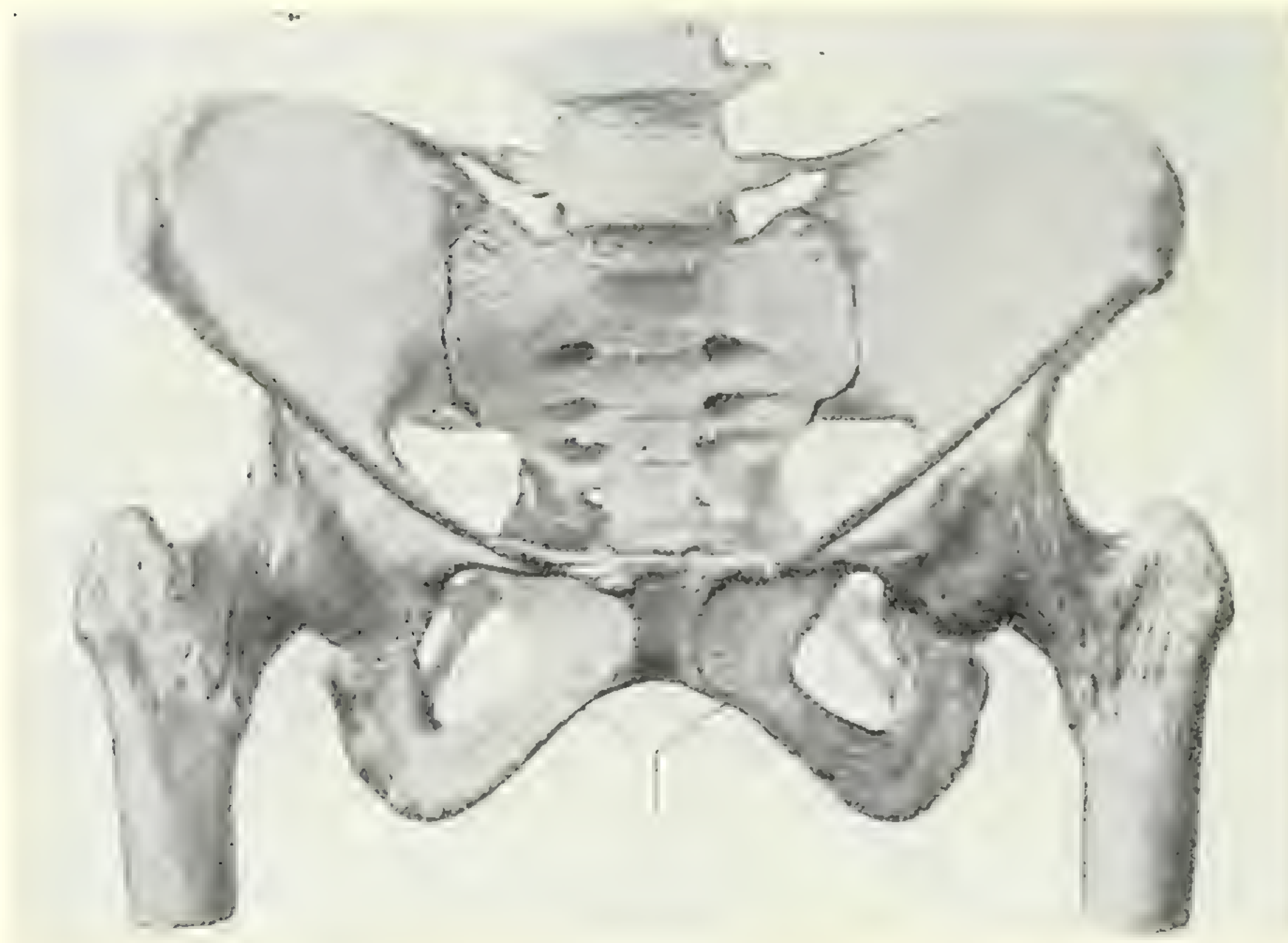


FIG. 90.—Sexual differences in the pelvis. (After Hoffmann.)

*in outline, and the vault of skull is proportionately greater than its base.* The particular shape of the upper part of the head, which Ecker has described and termed *Orthometopon* (see above), is sometimes in evidence, but it is not, by any means, universal, and is also occasionally found in men. *On the whole, the female skull more resembles the infantile ; and it should be remembered that skull (and head) are both larger in women relatively to their whole stature than in men, though absolutely larger in the latter.* We shall further discuss this difference as affected by the brain.

The second and more complex series of differences concerns *the degrees of*





Pubic arch

FIG. 91.—Anterior aspect of female pelvis. (After Kossmann-Weiss.)

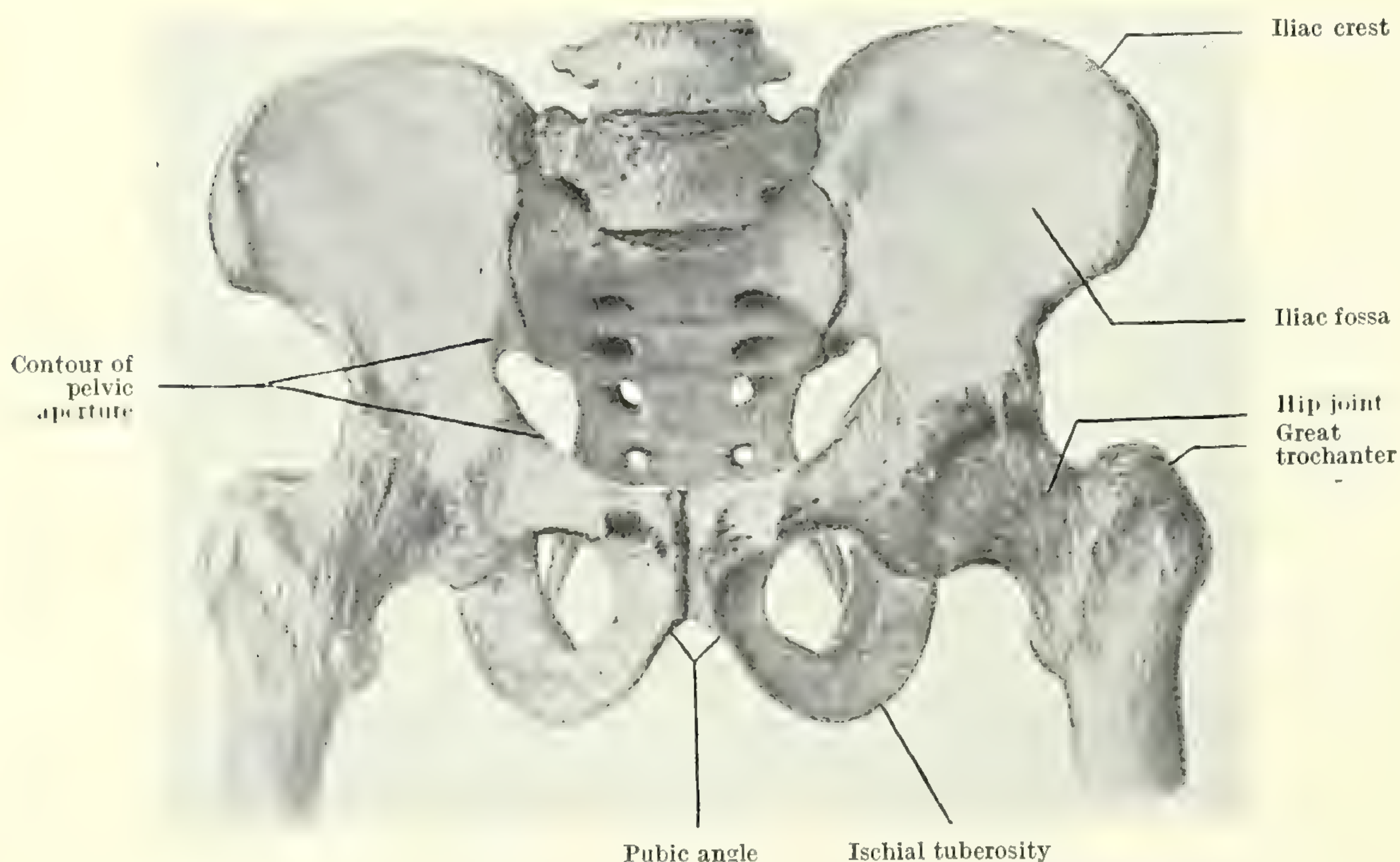


FIG. 92.—Anterior aspect of male pelvis. (After Kossmann-Weiss.)

*likeness or unlikeness* in the skulls of men and women respectively. The facts here are still more obscure. We have only more or less dependable statistical data regarding cranial capacity, weight and structure of brain.

The most unmistakable and conspicuous differences are in *the pelvic region*, although in the living the presence of the fatty pads suggests greater differences than really exist.



[In 1905 the American Gynæcological Society presented measurements for what was considered a "standard pelvis" in which a compromise had been effected between the various measurements recorded. Among those measurements which were given were intercrystal, 11 in. (28 cm.); interspinous, 10.25 in. (26 cm.); ext. conjugate, 8 in. (20.50 cm.); ext. oblique, 8.75 in. (22.50 cm.); and bitrochantic, 13 in. (32 cm.). Jarcho, in considering pelvic differences, gives a number of interesting comparative figures.]

The bones of the pelvis are not only broader in woman, but the hip joints are set further apart and the thigh bones must, therefore, converge towards the knees instead of keeping parallel, as in man (*cf.* Figs. 89–92). In order to keep the balance of the body there must be a corresponding divergence below the knees—that is, of the shanks and calves. The build of the female pelvis is adapted for child-bearing.

The pelvic differences between the sexes begin very early in the course of individual evolution, long before birth. Fehling, Hennig<sup>6</sup> and Thomson<sup>4</sup> concur as to this. Certain differences, such as the proportionately greater width than height of the symphysis pubis in the female, and the broadening of half the pelvic girdle, are perceptible at the beginning of the fourth lunar month of embryonic life and become more pronounced during the last fortnight of the fifth lunar month. Simultaneously, in all but a few exceptional cases, the pubic arch becomes blunter and more rounded and, according to Hennig,<sup>6</sup> greater and lesser sciatic notches are also modified. Hennig<sup>6</sup> says: "Whereas the maximum pelvic breadth shifts forwards early in the girl, the iliac bones grow stronger and thicker in the boy before birth. Fehling attributes to this divergence the remarkable fact that congenital dislocation of the hip joint is almost entirely confined to girls. In comparing the typical pelves of girl and boy, we find that the girl's shows a somewhat oval cavity and the boy's more resembles a blunt triangle. In new-born children, both cavities are cone-shaped and narrowing towards the lower aperture, but the sides are more abrupt in the boy."

Dieulafoy has published measurements taken by Charpy, which tend to show that the difference in the angles of the symphysis pubis are pronounced even before birth.

But here too—as in comparing the skulls of men and women—more differences are asserted in theory than proved in actual fact. Even so great an authority on osteology as Pfitzner has declared himself unable to distinguish the male from the female pelvis in every individual case. Waldeyer<sup>5</sup> has discovered a variant group of pelves belonging to women, but showing strongly masculine characteristics: massive bone formation, steep ilium, narrow pubic angle and conical cavity. This anomaly he terms *Pelvis viraginalis*, from *Virago*, a manlike woman. (*Cf.* Hirschfeld,<sup>1</sup> Vol. II., pp. 108–109.) It is here again a question of the whole series of intermediate types.

The shape of the pubic arch has always been considered of particular significance as a test of masculinity or femininity respectively in pelvic specimens. Dieulafoy undertook a minute investigation and measurement of 50 male and 32 female pelves and has sought to measure the angles and to ascertain also the other peculiarities of form in their variations. The width of the pubic angles could be classified into four groups (45°–50°, 51°–70°, 71°–90° and 91°–100°). The first was found only in male pelves and the last only in female: these representing the "typical" extremes. But the two middle groups were common to both sexes. The "mean averages" here were pubic angles of 66.7° for the man and 83.8° for the woman. These measurements differ very markedly from the German results of 75° in the male and 90°–100° in the female specimens. But W. Krause declares that this is not due to ethnical differences, but because Dieulafoy used specially prepared specimens.

In 30 per cent. of the cases under investigation, Dieulafoy found that the shape of the symphysis pubis of incontestably male pelves was more of an arch than an angle, that is, it deviated towards the typically feminine. And in 6.25 per cent. incontestably female pelves showed a masculine or angular formation of the *symphysis pubis*. In judging the sex of pelves, the size of the angle and the form of the pubic bone and of the ischium must be taken into consideration. But even in general characteristics he found two pelves of women's skeletons



which by their proportions and measurements might have been classed as male ! Thus, not only cephalic but also pelvic characteristics are extremely complex and individual, and it is doubtful whether it be possible to diagnose sex from the differentiated bony structure of the pelvic region alone—there are infinite gradations, within normality. Of course, in most cases, a practised observer can generally rely on his judgment.

Waldeyer <sup>5</sup> has written an important monograph on the pelvis. He describes the chief characteristics of this region in woman as follows :

“ The pelvis in woman is shallower and broader, therefore more spacious. The iliac bones are wider apart and the pubic angle is more obtuse and resembles an arch.”

The main sexual differences in the pelvis are as follows :

Pelvic Region.	In Man.	In Woman.
Sacrum . . .	Relatively narrower.	Relatively broader.
Curvature of sacrum . . .	More pronounced on the whole.	Less pronounced.
Promontory . . .	More salient.	Less salient.
Coccyx . . .	Five vertebræ frequent. The synchondroses ossify earlier in life.	Four vertebræ more frequent. Ossification of synchondroses later.
Symphysis . . .	Higher. In new-born children width is less than height, or equal.	Lower. In new-born children width greater than height
Joint cavity . . .	Infrequent.	Frequent.
Pubic angle. . . .	More acute. More angular (70°–80°).	Wider. More arched.
Pubic tubercle. . . .	Closer together.	Further apart.
Attachments of the gracilis muscles.	Closer together.	Further apart.
Margins of rami inferiores ossis pubis.	Straighter.	More everted.
Obturator foramen . . .	Oval. Narrower obturator canal. Set higher.	Almost triangular. Wider obturator canal. Set lower.
Iliac bone . . . . .	More vertical, higher, narrower.	Less vertical, lower, wider.
Iliac crest . . . . .	Thicker ; more uneven.	Narrower, smoother.
Acetabula . . . . .	Nearer together. Less forward.	Further apart. More forward.
Entry to the pelvis minor.	More dolichopellic. Narrower transverse diameter.	More platypellic. Wider transverse diameter.
Pelvic outlet . . . .	Narrower. Sacrum and coccyx more projecting.	Broader. Sacrum and coccyx less projecting.
Ischial tuberosities . . .	Nearer one another.	Further apart.
Pelvic cavity . . . .	Narrower and deeper. Contracted in lower portion, <i>i.e.</i> , conical.	Wider and shallower. No appreciable conical form.
Sciatic notch (major) . .	Shallower and more oval.	Deeper and more circular.

Derry made further measurements and comparisons on pelvic material of 406 specimens. These were mostly of Egyptian origin, but his conclusions may be of value for the women of our race as well. He considered that there were several diagnostically valuable traits : first, the greater breadth and wider arch of the female pubis ; secondly, the more even and unbroken curve of the iliac crests in women, whereas, in man, they turn sharply backwards and then drop abruptly—a difference already perceived and recorded by Thomson. Further, there is a marked small depression directly before the facies auricularis, which was described by Zaaier under the term sulcus præauricularis. In examining 167 male hip bones, Derry found this groove developed in only three cases, to the same degree as was usual in women. Derry also discovered and established another distinctive test characteristic in the considerably larger acetabulum in man. (Average ♂ 52 mm. ; ♀ 46·8 mm.) The acetabulum in woman was also



inclined somewhat more forwards. In the large majority of cases investigated by him these tests were found reliable.\*

Again we stress the fact that all human organs and functions are subject to individual variations to a greater or lesser degree. In the two significant regions of skull and pelvis, the ensemble of characteristic features is the main basis of diagnosis and the greater his experience of human variability the more likely is the investigator's judgment to be correct. According to P. Bartels, the following points have proved specially useful and reliable in establishing the sex of pelvic specimens :

(1) The heart-shaped form of the pelvic aperture in man, due to the lesser distance of promontory from symphysis and the more elongated oval form of the aperture in woman.

(2) The typical shape and position of the sacrum.

(3) The pubic angle in man contrasted with the pubic arch in woman.

(4) The breadth and depth of the symphysis.

(5) And, finally, the sciatic notches, which are more oval in man and more circular in woman.

Stratz<sup>5</sup> considers that great importance attaches to the sacral dimples or fossulæ lumbales, with which we shall deal later in detail. He classes them definitely as *secondary sex characteristics*. He says :

"The distance apart of the sacral dimples (*Distantia Fossularum lumbalium lateralium*) in the normal woman is from 2 to 3 cm. larger than in the normal man and in both sexes it is quite independent of the bodily stature and proportions. In the great majority of cases the distance is between 7 and 8 cm. in man and 10–11 cm. in woman. It will be universally admitted that so striking and definite a set of measurements established a fundamental difference between the sexes, in the sacral region."

There are also *femoral* differences in the sexes (*cf.* Klaatsch).

The thigh bone or femur is attached as follows to the pelvis : The medial surface of the upper femoral extremity is prolonged into a bony process termed the neck, ending in a more or less globular mass of bone termed the head, which is directed upwards and outwards from neck and shaft. This head is held within the acetabulum of the pelvis by powerful ligaments, permitting flexion or extension. The thigh, in its upper portion, shows marked sex differences. In women, the vertical axis of the neck of the femur forms almost a right angle with that of the



FIG. 93.—Bari woman with umbilical hernia and knock knee. (After Zintgraff.)

[\* Radlauer has published a comprehensive account of the sacrum from the modern point of view ; and Derry's account of the sulcus præauricularis can be supplemented by Löhr in the *Anat. Anz.* for 1894. Derry has also dealt with the sacrum from the point of view of sexual differences.]



main femoral shaft; in men, the angle is appreciably wider and more obtuse. Thence, it follows that the male femoral neck is more obliquely directed upwards than is the case with women (*cf.* Parsons and Dwight).

This characteristic has been very useful in archæological explorations and excavations of primitive historical or prehistoric sites: for it has repeatedly enabled students to decide or to hazard a guess as to whether human remains were those of men or women.

The skeleton of a powerful man, as depicted in Fig. 78A, should be compared with that of a well-developed woman (78B) in order to realise these differences of bony framework.

The anatomical peculiarity of the angles of the femoral neck and shaft in the two sexes respectively makes differences in the structure of the lower limbs and their power and manner of action. The outermost contour of the upper thighs in women is further from the exact middle line of the body than in men; this circumstance explains why, in women of normal or average build, the width of the hips equals or even sometimes exceeds that of the shoulders, whereas in men the shoulders are definitely wider than the hips. (*Cf.* the measurements by Weils, quoted above.) Examples are given in various illustrations in our text (Figs. 74, 83, 84, and of the half-breed in Fig. 128).

If a woman stands upright and with her legs together so that the inner surfaces of both knees and both heels touch, the femoral shaft is drawn more obliquely than a man's in a similar posture. Therefore, women of average bony structure tend to be (physiologically and normally) somewhat knock-kneed, which is accentuated by even a slight forward thrust of the knees. This is graphically shown in Figs. 93 and 94.

Krämer noticed that women in Samoa and the Gilbert Islands were inclined to be knock-kneed.

And this physiological tendency, based on anatomical structure, has, according to F. K. Francke, probably been increased among women of the white race, in the past, by deprivation of active exercise and the wearing of tight skirts, etc.

Dwight has measured 200 male and 200 female anatomical specimens (post-mortem) of the white race and found the diameter of the cartilaginous surface of the condyles in both arm and thigh absolutely greater in men.

There are, consequently, certain typical differences of gait and movement in the sexes dependent on structural differences, pelvic and femoral, as well as in part on muscular development, although these differences are often emphasised and exaggerated by the costumes worn. J. Fränkel<sup>2</sup> has carefully analysed these characteristic movements by means of cinematographic illustration. Women move with a lesser degree of muscular exertion; they move their hips



FIG. 94.—Samoa woman showing knock knee.



together with their lower limbs in walking. As the thigh and leg swing forward in each step, the lateral flexion of the whole trunk causes a slight rise of the hip line and dip of the shoulder and the shoulders appear to balance the movements of the hips, while head and neck balance the shoulders.\* There is also apparently a typical difference in the length of time the body weight is balanced on *both* feet, this being longer in men. But here too as in so many cases of variability, endocrine constitution has the last word. Men of "effeminate" type and women of "mannish" type approximate the normal of their respective opposite sexes in gait and balance of body.

The skin of woman is generally softer, more delicate in texture and often less pigmented, *i.e.*, a shade lighter in colour than in men. The blood in the tiny network of capillaries and small blood vessels in the face shines through the delicate skin and gives the rosy cheeks we know in women.

Among men of our race, many portions of the body have a more or less thick covering of hair, while the softer, shorter down plays a subordinate part. In women, on the other hand, this down is marked, growing on the cheeks, the back, the outer surfaces of the arm and the shins below the knee. It is, as a rule, denser in blonde women than in brunettes, though less perceptible, owing to its paleness (*cf.* Fig. 75).

Waldeyer says that differences in the texture and distribution of the hair appear during childhood, as between the two sexes. But H. Friedenthal<sup>3, 4</sup> has pointed out that in a far-reaching investigation boys of the white race do not differ in this respect very greatly from girls before puberty. In girls, just before and at puberty, the long crisp coarse-textured hairs appear first on the mons veneris and then in the armpits. In the boy, the hair grows first around the genitals, then, simultaneously, under the arms and on the upper lip. Then the typical masculine growth on chin and cheeks, followed by that on the chest and upper abdomen. The average adult male European has the following distribution of hair: he will probably become at least partially bald at middle age and the hair of the scalp has a tendency to fall out early. The eyebrows are fairly long and stiff (terminal) and there are a certain number of hairs in the nose and ears, and on the lips, cheeks and neck. On chest and upper abdomen there is some hair, and there is also the pubic hair, which has a secondary sexual characteristic difference in the manner of its growth at the upper (abdominal) edge, being convex or running to a point or arch, upwards. In men of very hirsute type—for there are great individual differences here—this pubic hair may reach the navel; but, in castrated males, the pubic hair grows in the same manner as in women. There are also hairs at the anus, on the back and on the outer surfaces of the limbs. The eyelashes tend to be short and thin, and down on the body is very sparse. The typical texture and distribution in European women is almost the exact opposite. The hair of the head and scalp grows thickly and to varying but considerable length; both eyelashes and eyebrows are thick. The coarser hair is normally absent, or very sparse, except in the armpits, and the pubic hair is (also normally) thicker than in man and grows either in an even line or a concavity along its upper edge (Lipschütz). The downy hair grows closely on cheeks and nape of the neck. We may summarise the differences as follows: in man, the downy hair is suppressed in favour of the coarser hair; in woman, the down is developed (*cf.* Friedenthal). There are marked racial differences. Among the dark-skinned woolly-haired races—with the exception of the Melanesians—the coarse hairs of the man are hardly developed; the exceptions are the Melanesians and the Australian aborigines, whose scalp hair is, however, somewhat different as well. And among women of woolly-haired races the hair of the head has no steady growth. The shortest head hair is found among Bushmen, and it is not certain whether there is much difference between their men and women in this respect. Moreover, among woolly-haired races, neither sex is richly endowed with hair on the pubes, in the axilla, nor on cheeks and chin. Among the yellow and brown straight-haired races (Indians) there is a change in the scalp hair. So we may summarise as follows: similar growth of hair on head of both sexes in woolly-haired races, longer hair in women of smooth-haired races and longer hair in men of straight-haired races. There is one portion of the human form which is sometimes strongly

\* If executed with spontaneous grace and muscular control, as among Spanish women, whose walk is eloquently described by Havelock Ellis (in "The Soul of Spain"), and associated by him with their lordosis ("saddleback") and "greater aptitude and accentuation of the hips."



hairy in man and never in woman ; that is the outer lateral surface of the upper arm, which is part of the region of the shoulders.

The amount of fat (adipose tissue) in the body is important, as affording nutrition and sustenance to the organism and as showing general condition. A well-nourished man or boy (of normal endocrine constitution) will tend towards strong bony and muscular development ; an equally well-nourished and typically normal woman or girl will become plump to some extent, and this gives the distinctive fullness and softness of outline which—within due limits—appears appropriate and attractive, not only in the narrower more specifically sexual sense, but æsthetically as well. There is something alien and repellent in very angular and flat surfaces in women, such as appear among certain primitive races, owing to overwork and poor living at an age when European women are still in the prime of life. (We may cite certain African and

Australian native races.) On the other hand, there may be exaggeration and excess as well as defect here, which appears to Europeans somewhat gross and grotesque. Negroes and certain Orientals admire very fat women and try to produce this condition by dieting girls at puberty. And among the Hottentots and Bushmen there is enormous development of fat in certain special regions of women's bodies, *i.e.*, in the hips and buttocks. These peculiarities will be described more fully in the chapter on ethnical differences in the female pelvis.

The adipose layer may be considered a most important secondary sexual character in women. It produces the tapering roundness of the limbs, the curves of throat, nape and shoulders, the swelling of bosom and curving roundness of buttocks ; all the characteristic signs of womanhood. This adipose layer also produces the smooth cushioned shape of the knee which differs so markedly from the masculine form (Fig. 95). And the massive roundness (which sometimes appears disproportionate) of the upper thigh in women, tapering rapidly towards the smooth dimpled knee, is caused by the same fatty layer. A striking example in an artist's model is depicted in Fig. 96.

The relative proportion of muscular tissue and adipose tissue is characteristic. Bischoff's measurements gave the following results : In man, 41·8 per cent. muscles and 18·2 per cent. fat ; in woman, 35·8 per cent. muscles and 28·2 per cent. fat. He examined two individuals, a man and a woman, who both

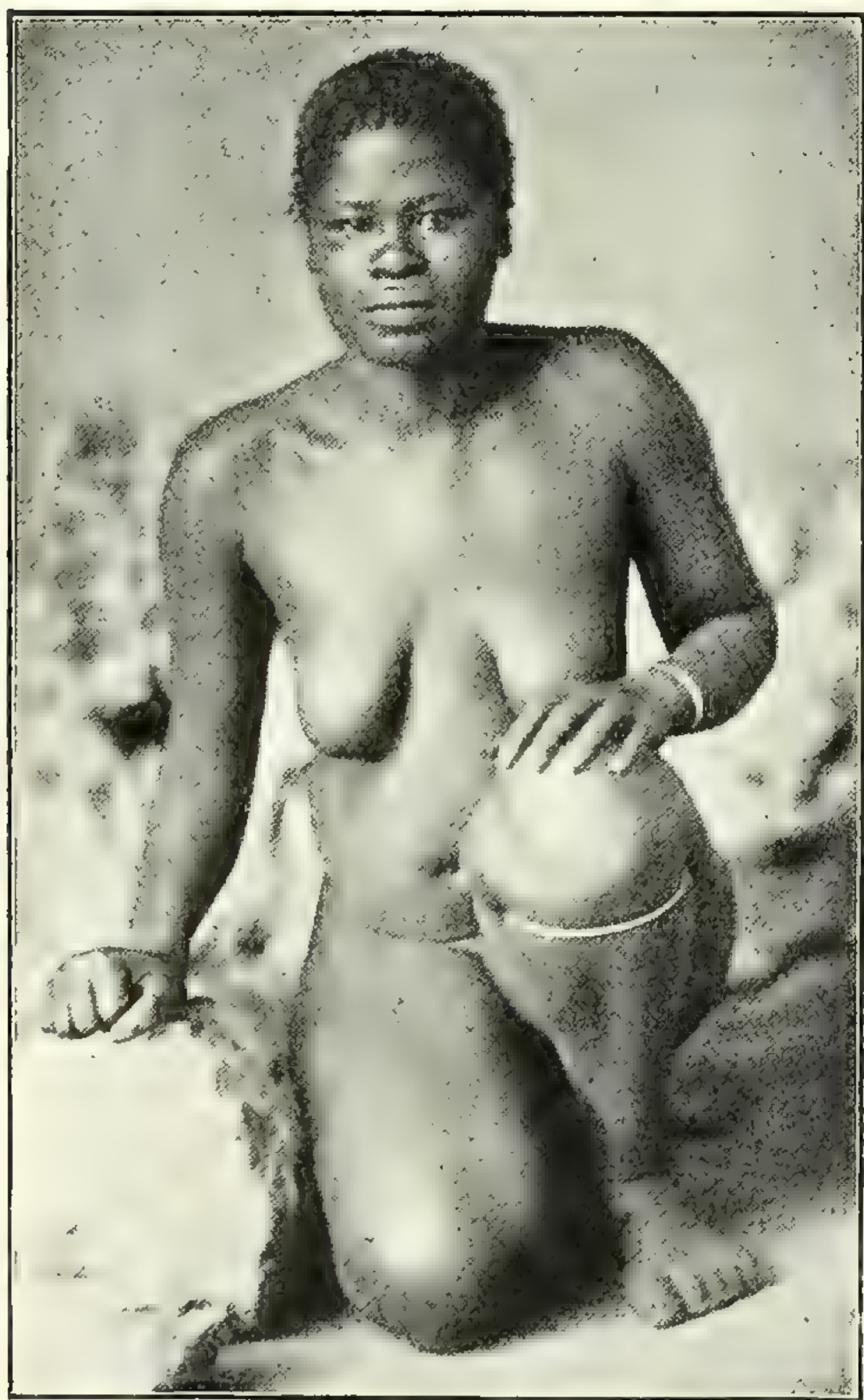


FIG. 95.—Roundness of thigh and knee in South African negress.

weighed about 55·5 kg. (just over 9 stone). The woman had 19·85 kg. of muscle and 15·67 kg. of fatty tissue ; in the man, the respective proportions were 23·06 kg. and 6·16 kg. Excessive obesity is more frequent in women. Among 86 cases recorded by Bouchard, 62 were women. In disturbances or anomalies of the endocrines, these tendencies are reversed ; effeminate men are often very soft and fat in bodily texture ; viraginous women lean and muscular, with large powerful bones. Testicular defect makes men fat ; ovarian defect makes women thin (Hirschfeld,<sup>1</sup> Ellis,<sup>1</sup> p. 49).

It is a matter of common knowledge that women have smaller and weaker muscles than men. Their movements are less vigorous and generally less abrupt. The walk of women is more rhythmic, and in very favourable cases of physique and balance has an undulating grace, but very few women can run quickly or with ease or for any length of time. "As a moving mechanism, the male body is more powerful and capable of more varied and rapid action than the female. Improvements in women's education, with greater attention to physical culture and exercise, will not change basic structure," says Waldeyer.<sup>4</sup> Measurements have shown that



“ the weight of the muscles in the healthy adult woman is less than one-third of the whole body weight, whereas, in the healthy adult man, it averages more than a third.” The muscles of legs



FIG. 96.—Roundness of hip in artists' models. (Verl. R. A. Giesecke.)

and thighs in both sexes are relatively equal in proportion to the total muscular system, but in man the muscles of the arms greatly preponderate (Waldeyer <sup>4</sup>). Fig. 97 shows the difference



in the upper arm of both sexes. The only exception among muscles is said to be that of the tongue! Theile's measurements have indicated a higher degree of development in women here (Waldeyer<sup>4</sup>).

These muscular differences cause great unlikeness in skeletal build. All the bony processes and joints to which the muscles are attached are more salient and more massive as the muscles themselves are more strongly developed; and the smaller, feebler feminine muscles mean smaller and frailer bones.

There are visceral differences and differences in metabolism. Women need less food apparently and endure thirst and hunger better than men. In men, the heart and blood vessels are more capacious and the walls of the arteries thicker and more solid. The consistency of the blood differs in the sexes. "In round numbers, there are 5,000,000 red corpuscles in each cubic millimetre of blood in man; in woman there are 4,500,000 to the cubic millimetre. The specific gravity of the blood is less in woman. The relative amount of blood appears equal in the sexes, but has not been fully investigated. As the red corpuscles carry the necessary oxygen to the



FIG. 97.—Transverse section through the upper arm at the border of the middle and lower third. Left, male; right, female. (After Kossmann-Weiss.)

tissues of the body, the difference in their amount is extremely significant" (Waldeyer<sup>4</sup>). Woman's organism appears to make blood more rapidly than man's; this enables her to meet considerable periodic losses and to replace them.

There are differences in the inner aspect of the bladder, for, in man, the middle lobe of the prostate gland causes a bulging in the uvula vesicæ; in woman, there is no prostate gland and consequently no uvula. The bladder is more conical at the point of juncture with the urethra (*orificium urethræ internum*) in woman than in man (Corning); and the organ is also more capacious, causing differences in the function of micturition.\*

Weisbach<sup>2</sup> examined and tested the frequency of the pulse in individuals of many races and found that the pulse was slower in man; the frequency here reached 84 beats per minute, while in woman it could reach 94. The more rapid pulse rate of women corresponds to their greater sensibility.

The lungs in woman have less capacity than in men of the same height. It has been reported that a girl, 10 years of age, uses up 0.22 gm. of carbon-dioxide for every kilogramme of body weight in 24 hours; a boy of nine years, 0.25 gm.

It has been estimated that in woman the hand has one-third less force than in man. There

\* [This is very doubtful.]



are perceptible differences in handwriting : women's handwriting is less thick and often more slanting.

All human beings have special emanations from the pores of the skin, especially from the sweat glands, and there are notable individual differences here. There are also probably specifically sexual differences,\* especially in the armpits, which are among the erogenous zones. In women, the sudoriferous, or sweat glands, are more developed and in men the sebaceous glands (Hirschfeld <sup>1</sup>).

The main functional difference between the sexes is the process of lactation by the mammary glands. These glands develop in maturity. Their fullness and firmness in the adult woman who is not a prospective or nursing mother is caused by their amount of adipose tissue. But, during pregnancy, the alveoli and lactiferous ducts increase in size and number and prepare to secrete milk.

Women breathe more rapidly and therefore oftener than men. Among Western races women tend to breathe from the chest, and men from the abdomen or diaphragm. It is not certain whether this difference is innate or acquired, as a result of costume and habit (Hirschfeld <sup>1</sup>).

As the distinctive difference in pitch of voice begins to develop at puberty, so before this period no essential difference exists between the two sexes.

Scheier <sup>1</sup> says : " It is only after puberty that the specific sex difference in larynx and voice are fully manifested. In the male sex the upper convex margins of the two broad laminæ of the *thyroid cartilage*—which in the centre form the superior thyroid notch—are prolonged and appear as the *laryngeal prominence* or so-called ' Adam's Apple ' (which gives the masculine throat its distinctive outline in profile). In the female sex the thyroid notch remains more infantile in structure. The masculine larynx becomes the larger in all its dimensions. According to Langer the boy's rima glottidis doubles in length (ratio 10 : 5), whereas in the girl, the ratio is 7 : 5). The average length of the vocal chords in woman is 13 mm. and in man 18 mm. Thus the voice in woman is normally an octave higher in pitch. The break of the voice is a distinctive sign of male puberty, and the voice in both sexes is intimately connected with sexual expression and sexual attraction. The shape of the larynx alters, being particularly larger in the sagittal diameter in men, whereas its growth is more vertical in women. The thyroid cartilage is more developed in men and the cricoid cartilage and epiglottis, on the other hand, are smaller in women. The angle of the thyroid laminæ is generally less than a right angle in the male larynx (is therefore more acute and salient), whereas in women, the angle is generally wider, *i.e.*, obtuse. Moreover, the point at this angle remains for a longer time cartilaginous and thence, to some degree, mobile and elastic in woman, but ossifies solidly in man shortly after the twentieth year."

There are also characteristic differences in the ossification of all the complicated laryngeal cartilages in adult and advanced years. Scheier <sup>1, 2</sup> has studied these differences and illustrated them by means of skiagrams. The results in women are seen to be " that the first portions of the thyroid cartilage to ossify are the inferior cornu and the posterior border, and that the process of ossification advances slowly in all directions, upwards, forwards and downwards, at an even rate, but never involves the whole of the thyroid, even at the most advanced age. The frontal-medial portion of the structure remains cartilaginous, though there are isolated cases in which signs of ossification have been found in the angle or junction of the laminæ."

But, in man, the ossification spreads steadily from the posterior portion of the

\* For a fuller treatment of this important, but still obscure, subject, see Dr. Th. H. Van de Velde's work " Ideal Marriage : Its Physiology and Technique," Chapter III., pp. 26–39 inclusive. (William Heinemann (Medical Books) Ltd., London.)



thyroid cartilage, especially from the inferior cornu to the lower border, towards the front ; while a fresh point of ossification appears at the lower extremity of the angle at the point of attachment of the vocal chords. And the two centres of bone formation fuse and merge, while a slighter bony zone appears above them and in front. Thus the cartilaginous surface is divided into two sections ; one, the smaller, in front and the other, somewhat larger, behind. As the process of ossification continues, there remain only two circular patches or islands of cartilage, which are the last to ossify, and the thyroid cartilage becomes in the male larynx—the thyroid bone. The exact years of life at which these successive stages of ossification take place are uncertain and authorities differ here ; Bichat considers the latest date for the beginning of ossification in both sexes to be between 36 and 40. Henle believes that ossification begins in man between 40 and 50 and much later in woman. Sappey says between 40 and 50 in man, between 70 and 80 in woman. Moritz Schmidt thinks that 40 is the latest date for its inception (Scheier <sup>1</sup>).

Much material has been collected on the absolute and relative weight of various organs of the body in men and women respectively.

The general results of these statistical comparisons would seem—at least in some respects—to show that the female organism is more childlike in structure than the male. Bischoff, Theile, Beneke, Vierordt and others have stressed such differences, but too great importance need not be attached to their results for the reason that some are based on a very small number of individual cases ; for example, Bischoff compared the measurements of one man and one woman ; Theile those of eight men and four women. And there are many possible sources of error in such post-mortem measurements. These possible sources of error include the cause of death, congestions, age at death, functional atrophies, etc. Thus these specific measurements are omitted and reference is made to those interested to the original investigations of Bischoff, Theile, Beneke and Vierordt and to the summaries of Waldeyer, Havelock Ellis and Oscar Schultze.

The accessory sex differences to which reference has just been made are not biologically necessary, *i.e.*, indispensable to the begetting, carrying and bearing of new life, but they are typical in deciding the external characteristics of men or women. At a time when the action or even existence of the ductless glands and their secretions were unknown, these non-genital characteristics were termed secondary (Charles Darwin). This term is now recognised as inadequate. Poll terms them accidental and extragenital, and distinguishes two categories, internal and external, and they can also be called “accessory.” But the term *secondary* may be used for clearness and because the newer terms have not yet become generally familiar. There are excellent studies of the subject by Havelock Ellis in his “Man and Woman,” \* by Oscar Schultze, and, on modern lines, by Magnus Hirschfeld in his “Sexual Pathologie.” Moreover, we must also refer to the standard monographs of Friedenthal <sup>1, 3</sup> on the hair.

### (c) Secondary Sexual Differences of Brain and Cranial Cavity, especially among European Women

The most widely discussed of the secondary sexual differences has been that of brain, for the greater or lesser development of this organ has been accepted in the past as the signs of greater or less intelligence and intellectual ability. We are now in a position to estimate and compare the complexity of the brain structure by direct weighing and examination in the case of anatomical specimens, but there

\* William Heinemann (Medical Books) Ltd., London.



is also some justification in taking the size of head and skull (especially in its circumference) as some sign of the development of the material contents.

But these measurements are not easily made and can only be of use if carried out by an expert. Exactitude is necessary; actual measurement, for instance, of the head itself. The hair in women, if worn long or elaborately dressed, is a constant impediment to accuracy. The method of judging cubic capacity by filling the specimen skull with some liquid or with pellets of some substance—beans, millet or shot—gives very different results in different hands, resulting in differences not always comparable. These discrepancies may be avoided by adopting the method recommended by P. Bartels,<sup>2</sup> but they occur often enough and diverge widely enough to make the data obtained by different investigators unsuitable for comparison and synthesis. When the brain alone is weighed these points must be considered:

- (1) At what point has the brain been separated from the spinal cord?
- (2) Have all or any of the meninges\* been included in the weighing?
- (3) Has the cerebro-spinal fluid also been included?

Cause of death, age, prolonged morbid conditions, all affect the brain. And the specimens observed vary in number, origin and many other respects, while the investigators vary also in their power of clear and accurate presentation of observed facts.

Thus the available statistics must be received and treated with great reserve, as provisional and average. All the more so because these particular anthropometrical data have been quoted in the literature of the lay public and used in the most uncritical manner and with the air of authority.

Bearing these facts in mind, we may summarise the results of the most reliable investigations, and, first of all, as regards *absolute measurements*: in the table immediately following (weight of brain), we have followed a tabulation by Ziehen and added the results of Marchand and Handmann, as well as Taguchi and Spitzka.

#### ABSOLUTE WEIGHT OF BRAIN

Authority.	Origin of Material.	Number of Tests.	Brain weight in grammes.	
			♂	♀
<i>Boyd</i> . . .	English . . .	2086	1325	1183
<i>Reid</i> . . .	Scottish . . .	87	1424	1262
<i>Peacock</i> . . .	Scottish . . .	195	1423	1271
<i>Sappey</i> . . .	French . . .	32	1358	1256
<i>Parchappe</i> . . .	French . . .	—	1323	1210
<i>Bolk</i> . . .	Dutch . . .	130	1355	1189.2
<i>Hoffmann</i> . . .	Swiss . . .	113	1350	1250
<i>Weisbach</i> . . .	Swiss . . .	243 †	1265	1112
<i>Bischoff</i> . . .	Bavarian (German) . . .	906	1362	1219
<i>Marchand</i> . . .	Hessian (German) . . .	707	1400	1275
<i>Handmann</i> . . .	Saxon (German) . . .	1014	1355	1223
<i>Taguchi and Spitzka</i> . . .	Japanese . . .	374♂, 150 ♀	1367	1214

† In Weisbach's specimens, the *pia mater* has been removed.

Thus there is, on the average, and absolutely, greater weight of male brain; the brain is less heavy in women.

\* The three membranes sheathing the central nervous system. From without inwards these are: the *dura mater*, the *arachnoid*, and the *pia mater*.



There follow certain statistics of cephalic capacity, also absolute and not relative. But the cautions and suggestions put forward above should be borne in mind, also individual differences in technique among investigators.

### ABSOLUTE CEPHALIC CAPACITY

Authority.	Origin of Skulls.	Number.		Cubic capacity in c.cm.	
		♂	♀	♂	♀
<i>P. Bartels</i> . .	Berlin, German Collection . .	38	32	1420·3	1205·7
<i>Mehnert</i> . .	Alsatia . . . . .	34	18	1479·3	1295·0
<i>J. Mies</i> . .	Baden, nr. Heidelberg . .	48	26	1513·2	1330·5
<i>J. Ranke</i> . .	Bavaria, rural . . . . .	100	100	1503·0	1335·0
<i>Rüdiger</i> . .	Bavaria, Munich . . . . .	21	6	1483·1	1343·3
<i>Kupffer</i> . .	East Prussia . . . . .	101	35	1390·4	1277·5
<i>Welcker</i> . .	"Of Saxon Race" . . . . .	30	30	1448·0	1300·0
<i>Welcker</i> . .	Neighbourhood of Halle . .	60	43	1460·0	1300·0
<i>Weisbach</i> . .	"Mostly of Austrian Origin" .	50	23	1521·6	1336·6

These results show absolutely greater cubic capacity of skull in the men in every group ; the skull is less capacious in women. The same results are found in ascertaining and comparing the horizontal circumference of the skulls ; the average circumference is greater in men in every case ; this means that head and skull are smaller (absolutely) in women.

These are absolute measurements. What of relative proportions ? for women are smaller in stature and less in weight on the average than men. Ziehen declares that his results show an average higher weight of brain in women relatively to their weight of body.

There have been vehement criticisms of his comment, especially from Möbius, who contended that the total mass and weight of the body governed by any single brain had no effect on the weight of that brain and pointed to various animals to support his view.

Other comparisons and correlations have been attempted. For instance, the weight of the brain has been correlated with length (or height) of the body.

Handmann's investigations would seem to prove that the relationship here is very uncertain and the sum of differences observed but slight. Handmann, Bischoff, and Wendt all found that there was a slight preponderance of relative brain weight in man. The number of cases compared was 1078.

On the other hand, if the circumstance of the head or skull is compared with the bodily stature (which is difficult, as the available data are very scarce), it has been found by P. Bartels<sup>1</sup> that women have a relatively slightly larger cephalic circumference. The collection on which he made his investigations was certainly very small and the difference recorded was slight.

But, in general, we may say that, as the average man is taller, more massive and heavier than the average woman, his skull and brain are also absolutely larger and heavier than hers.

There may be three reasons for this : either because of relative weight of body, or relative height of body, or for reasons of organic constitution, which we do not yet understand, and apart from bodily dimensions.

It has, however, hitherto been impossible to decide which reason is the determinant, or whether all three are operative to a greater or less degree. The matter



is not, by any means, easy to decide by means of measurements of averages, and we must also remember that intelligence and mental power have many constituent factors.

Attempts have been made to group estimated differences according to ages, but Ziehen has pointed out that this is inadequate and misleading. He allows a fairly large margin for "variability," and has calculated that the European man has an average brain weight of 1535 gm. and the European woman of 1226 gm. Paul Bartels<sup>1</sup> compared percentages of abnormally capacious skulls (with a cubic capacity of over 1600 c.c.) and microcephalous skulls (capacity below 1200 c.c. in both sexes), and found Virchow's view correct so far as his material was concerned.

#### AVERAGE BRAIN WEIGHT AT BIRTH

Authority.	Number of Cases.		In Boys.	In Girls.
	♂	♀		
<i>Bischoff</i> . . . .	21	19	gm. 377.2	gm. 386.5
<i>Boyd</i> . . . .	43	31	393	347
<i>Mies</i> . . . .	79	69	339.2	329.9
<i>Vierordt</i> . . . .	36	38	381	384
<i>Marchand</i> . . . .	16	8	371	361
<i>Handmann</i> . . . .	43	41	404	377
<i>Ylppo</i> . . . .	3	—	389	—

Mies, Pfister and Wolpin have measured and weighed brains in specimens from the first two decades of life and found the absolute brain weight greater in boys. The number of specimens weighed were over 2,000. Handmann declares that the weight of the human brain doubles in the course of the first nine months after birth and trebles between the fourth and sixth year. It is probable that the brain attains its full weight about the eighteenth year, and this is supposed to take place earlier in girls than in boys. Wolpin agrees with Handmann after testing 220 brains. Even when difference in stature is accounted for it would appear that the difference in brain weight exists; and there is little evidence which suggests that before puberty girls are superior in brain weight as might have been supposed.

Thus there is apparently an average difference at birth and the brain grows more rapidly in boys and attains its full development earlier in girls.

Are there differences in the structure of the brain as well as in its size and weight? There is great range of individual difference or variability here (see Waldeyer's<sup>9</sup> statistics). But it can be definitely stated that there are no differences of so extreme and distinctive a kind that they at once reveal whether a brain is that of a man or a woman, any more than there are such differences in the skull. G. Retzius, who compared 75 male and 25 female cerebral hemispheres in the most detailed manner, concluded that "The female specimens showed somewhat fewer deviations from the main type and a greater regularity and simplicity of structure. Most of the recorded anomalies occur in woman's brains as well, but in a lesser percentage of cases. No special arrangement of sulci or convolutions in the human brain is specifically masculine or feminine, *i.e.*, limited to either one sex" (Raubert-Kopsch).

Certain average differences have been found in the infantile and embryonic



brain as well as in the adult organ. Rüdiger has the distinction of having made the main discoveries in this field. He says that Robert Boyd's results have been confirmed in still-born children and corroborates an average difference of brain weight in such children amounting to 46 gm. less in the girls. All three cranial diameters were greater in the boys; the sagittal on an average more so than the coronal or the horizontal (by 0.9 cm. compared to 0.5 cm.). In most of the male foetal brains the frontal lobes were broader, higher and heavier than in the girls.

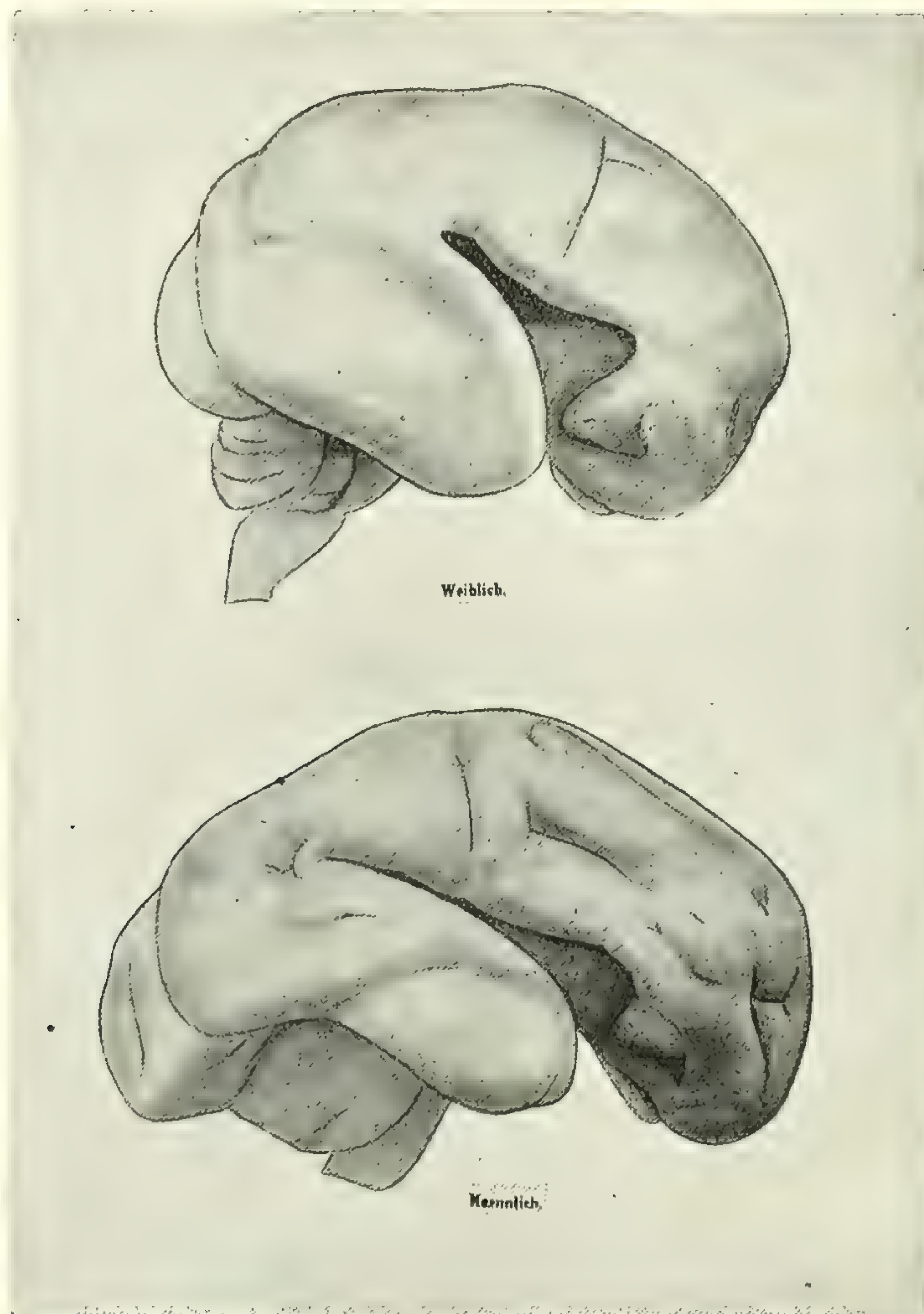


FIG. 98.—Brains of female (top) and male (bottom), twins, of 264 and 256 mm. length respectively. Lateral view. (After Waldeyer and Frohse.)

Huschke had already enunciated the axiom that man has more brain in front of the central sulcus and woman more brain behind it.

“During the seventh and eighth months of life in the womb, the male brain develops greater complexity in its gyri and the frontal lobes in the girl appear smoother and barer. The secondary transverse sulci and fissures appear in the boy before they are visible in the girl and their rate of growth is more rapid. There are specially marked differences as a rule in the parietal lobe in the boy; it is so strongly furrowed, while frontal and occipital lobes are still smooth as to be easily recognisable. Huschke was right when he declared the parietal lobes to be a specially favoured region in man.”

“The great central sulcus is more often crooked in the male foetus. But this is not a constant



characteristic, it appears also sometimes in female brains and is probably caused more by differences of individual anatomy in the skull than by sex."

"In the newly-born female the insula is both visible and accessible to a greater extent than in the boy; for the Sylvian fissure closes later than in him. In the seventh and eighth intra-uterine month, the central sulcus is less deep, and the occipital lobe less distinctly separated from the parietal. The gyri on the inner surface of the cerebral hemispheres are both smoother and simpler in pattern in the girl."

"In spite of many individual exceptions which deserve careful consideration, it cannot be

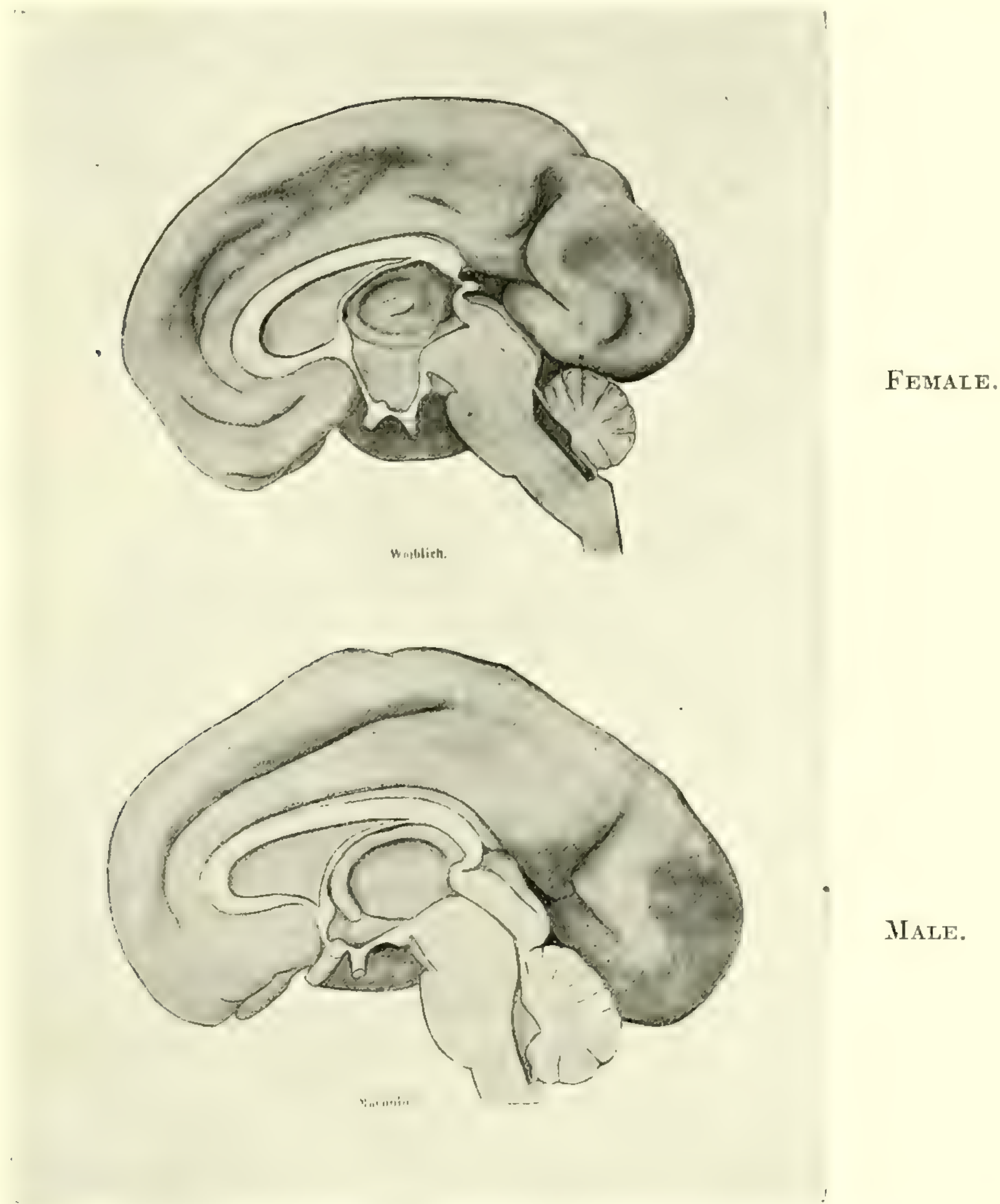


FIG. 99.—Medial view of the two brains in Fig. 98. (After Waldeyer and Frohse.)

disputed that there are typical differences in the cerebral structure of the sexes which are traceable even before birth."

These statements by Rüdiger have often been disputed, nor can they in any way be accepted as absolutely verified.

Rüdiger's estimates suffer from the defect common to all such generalisations: namely, that they are based on statistical averages, and the factor of human individual variability makes it difficult to ascertain the numerical preponderance of any typical norm. Waldeyer<sup>5, 9</sup> attempted to measure brains in infant twins



and triplets, including both boys and girls. But these measurements can hardly be regarded as of sufficient importance as there were only 15 specimens, and the embryological processes were obviously not normal. Moreover, Waldeyer himself was not certain if there may have been changes due to hardening. Nevertheless, the results have a certain interest (Figs. 98 and 99). Waldeyer says :

“ In comparing these brains of boys and girls, both the sulcus cinguli and the gyrus cinguli are seen to be well developed though the pars marginalis is lacking. The fossa parieto-occipitalis and the sulcus calcarinus are clearly visible, but the latter is only quite small. In both sexes, these portions of the brain were of almost equal size and development.

“ But in the furrows and convolutions on the convex cerebral surfaces there were differences. The fissura cerebri lateralis is appreciably longer and more pronounced in the male, whilst the central sulcus is still very imperfect in both sexes. But the male foetal brain shows a clear differentiation between the second and third convolution of the frontal lobe and there are already rudiments of the first frontal sulcus as well. There are even a few small sulci round the extremity. The temporal lobe is rudimentary in both sexes and differences are not perceptible. The frontal lobe is larger in the male, but I do not consider this of importance as I think other factors during the process of preparing the specimens may have been operative here. Otherwise, we might definitely distinguish differences in shape, the boy's brain being longer (or dolichocephalic) and the girl's broader (brachycephalic). Here, too, however, extraneous factors cannot be quite ruled out.”

#### (d) The Question of the Relation between the Weight of the Brain and the Intelligence in Both Sexes

The fact of sexual difference in brain weight has been vehemently and variously used in controversy, and either the absolutely greater average brain weight in man or the relatively greater (in ratio to bodily weight) average brain weight in woman have been made the basis of extreme and opposite claims and conclusions as to mental power and capacity. The relationship between brain weight and brain power throughout organic life is sufficiently important for some further consideration.

Absolute brain weight depends on other factors than the brain itself to some extent. Thus the anthropoid apes have brains weighing between 400 and 500 gm. on the average ; that is much below the human norm and even below the most primitive human specimens recorded. But certain large species of animal have much heavier brains than man : thus the elephant's brain weighs between 4100 and 4800 gm., the whale's between 1900 and 2800. These factors are certain, and, nevertheless, we know that on the average there is a certain relationship between mental quality and activity on the one hand and the absolute weight of brain on the other. Ranke has noted this in those “ laurel-crowned heads ” of persons eminent in some sphere of distinctively human achievement. Bischoff has collected statistics here and compared results, and the fullest collection of the data up to the present available is Spitzka's. After weighing over 100 eminent brains it was possible to say that many distinguished persons had conspicuously heavy brains, but that there were some whose brains were much under the average weight for the white race. Nevertheless, Spitzka's graphic curve was definitely and considerably higher than the graph for the average anatomical specimen. The “ laurel-crowned ” had heavier brains than the crowd.

Further investigation here is necessary, and strict elimination of unessentials and guesswork. The path first trodden by Manouvrier, decades ago, has been further explored by Eugene Dubois <sup>4, 5</sup> (the famous discoverer of *Pithecanthropus erectus*) and the French anthropologist Lapicque.



The relative weight of brain is generally computed in comparison to the body weight of the same person. It is calculated in terms of 1 for brain weight and higher numbers for bodily.

If this computation is applied to the various animal species the result appears absolutely individual to each species ; there is no ascending ladder from the most primitive mammalia to human beings. Among mammals, the highest ratios were those of the marmoset ( $1/22$ ) and the rat ( $1/28$ ). Then came humanity. The mole had a ratio of  $1/36$ , the gibbon  $1/73$ , the gorilla  $1/100$ , the cat  $1/106$ . The dog had a much lower percentage of brain to body weight, namely,  $1/214$ – $1/304$  in different breeds, horses  $1/400$ – $1/700$ , the lion had  $1/546$  and the elephant  $1/560$ . Various explanatory systems and theories have been attempted. If we consider large and small species of the same genus (and, therefore, presumably the same mental type), such as the mouse and rat, the dwarf antelope and Beisa antelope, the cat and lion, then we find, of course, that the larger and heavier creature has the absolutely heavier brain. The lion's brain is seven times heavier than the cat's ; the rat's brain is  $5\frac{1}{2}$  times heavier than that of the domestic mouse, etc.

But the smaller species has always a relatively higher brain weight, *i.e.*, a brain weight in proportion to its weight of body. Thus the cat has *relatively* to its body weight a brain five times heavier than the lion, and the mouse a brain four times heavier than the rat. The same rule holds good as regards the physically smaller human creature, woman, and the physically larger human creature, man. This constant anatomical law is known as Cuvier's or Haller's or Weber's Law.

But, as regards animal species, there are obvious discrepancies between relative brain weight and relative mental power. Mice are not four times cleverer than rats ; nor cats five times more intelligent than lions. And—a very significant point—the cerebral cortex—the neo-pallium—is approximately of the same thickness in all these animals. Moreover, the brain is not only the “organ of mind” but plays an active *rôle* in both general metabolism and nervous processes. Probably there is a direct relationship between the extent of bodily surface (as distinct from bodily mass), nervous activity, temperature and rate of metabolism.

The calculations of Dubois confirm this view. The lion has approximately 11 times more muscular power than the cat, but he has 36 times more body to move. Thus, the cat must move more rapidly and use up more nervous energy, which means a higher degree of nervous development and hence a relatively heavier brain. Later, exact measurements have largely confirmed Dubois' speculations. Brandt, the Russian zoologist, has made most careful investigations into the nervous systems of the rat and mouse. He found, in the course of sections of the sciatic nerve in both species, that there were 8500 nerve fibres to the section in the rat and 3600 in the mouse, but, relatively to weight, the proportion was 2500 to 100 gm. in the larger species and 25,000 in the mouse.

Therefore it is probable that a third factor must be understood here, and that this factor is the whole surface, or superficial area of the organisms in question.

#### (e) Accessory Sex-Characteristics in Women of Non-European Races

The material for the measurements and tests summarised in our previous chapter has been of European race ; are our conclusions valid as between men and women of other races as well ? This is possible, and even likely, but it has not yet been proved, and this must be clearly borne in mind. All that we really know about the coloured races in these respects—*i.e.*, all that has been scientifically investigated, tested and established—is very little ; but it will probably be of



interest to students and general readers to obtain a cursory summary of our knowledge here. We shall deal with the general physique and reserve the main sexual characteristics of pelvis and breasts for more detailed treatment in subsequent chapters.

There are two general rules which appear valid for all the coloured races with hardly any individual exceptions.

(1) The women of these races are smaller in stature and less massive in build than their menfolk.

(2) The colour of their skin, however strongly pigmented, is a shade, if even a semitone, lighter than that of their menfolk.

In most cases the difference in skin hue is very slight, as Baelz remarks of the Japanese, and K. E. Ranke of the South American Indians. But there are pronounced cases of contrast. Thus N. A. E. Nordenskiöld found that the young women among the Chukchee of North-east Asia were as pink and white as European girls, while the men were yellowish brown. The same has been reported of the

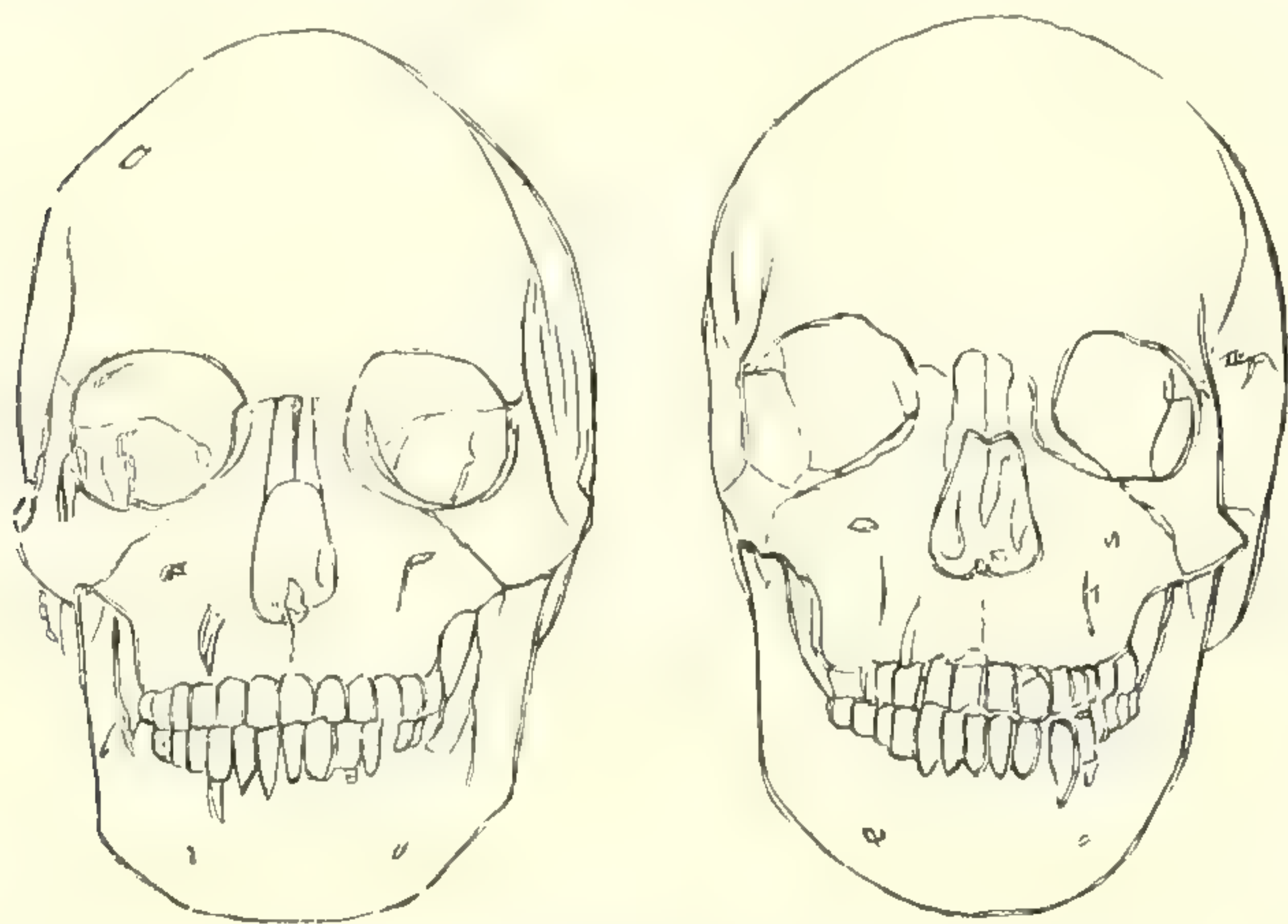


FIG. 100.—Sexual differences in the skulls of Australian Aborigines. R., ♂; L., ♀.

Bismarck-Archipelago (in the Pacific) by Parkinson and Thilenius. And there are further instances as well. There is inadequate material so far for detailed cranial and cephalic measurements of non-European races. But Sarasin has investigated Singhalese and Veddas, Koganei and Tarenetzky have studied the Ainu, and Kopernicki the Gipsies. A. Ecker has extended his enquiries among non-European races and has been good enough to furnish the illustrations—here reproduced—of the skulls of a man and a woman, both Australian aborigines (Fig. 100).

Hennig,<sup>2</sup> an expert on pelvic peculiarities, says: “The more primitive a people the slighter the characteristics of womanhood in the bones of the pelvis. The ilium rises and moves backwards, assuming an animal form, probably the result of incessant heavy muscular work and carrying of heavy weights, which make the pelvis more angular and the muscles thicker and more prominent.”

Taguchi and Spitzka have weighed some Japanese brains. These were of specimens between the ages of 21 and 95; there were 374 men and 150 women.

They came to the following averages (in grammes):

$$\text{♂ } 1367 \left( \frac{1790}{1063} \right) \text{ and } \text{♀ } 1214 \left( \frac{1431}{961} \right).$$

The Austrian frigate *Novara* made an expedition to Africa and then to the Pacific, in which a wealth of ethnological material was collected. Weisbach has correlated some observations as follows:

“According to these observations, the following sex differences obtain among the Chinese. The woman is conspicuously shorter and muscularly weaker; she has hardly more than half the man’s force in pressure of the hand. Her pulse is noticeably more rapid. Her head is comparatively larger, both higher and wider, and her face less prognathous. The upper part of the face is longer and narrower between the cheekbones, tapering more below them. The nose higher



in the bridge and narrower and the mouth smaller. The neck thinner and shorter, with narrower chest measurements and wider pelvis. The thorax is smaller in all its dimensions ; the abdomen thicker and the navel situated further above the pubis. The spine appears longer in the dorsal region. The upper limb shorter and more slender, the upper arm less cylindrical, the middle finger longer and the whole hand longer and narrower. The lower limb is longer, with thicker thigh and knee, the shins and lower leg are only thicker above the ankle, the foot shorter and smaller altogether."

"The Javanese women have somewhat lighter hair than their men, its colour is very dark brown. They have a quicker pulse and much weaker muscular grip (half the men's). They are noticeably shorter with relatively larger, higher, but equally brachycephalic heads. Their face is as a rule, somewhat broader, but not in proportion to its length. It is wider over the cheek bones, but relatively narrow at the angle of the lower jaws. Yet the lower jaw is probably more prognathous than in the men and the nose and mouth wider. The neck longer and thicker. The thorax shorter, the waist thicker, the spine longer and the navel higher set. The arm, on the whole, longer, especially above the elbow, the lower arm shorter and both thicker and more conical than cylindrical. The hands are longer and more tapering. The leg is also on the whole longer, and thicker in the thigh, knee and calf ; the thigh is as long as in men, and the shin longer and less meagre. The foot is larger in all dimensions and thicker in the ankle."

"Among the Sudanese, the following differences are found. The woman is smaller, less muscular, with quicker pulse and a relatively larger and broader, more brachycephalic head. The face is higher and wider above the cheek bones and less prognathous. The brow is higher, the nose flatter and the mouth larger. The neck is longer and thinner and the chest narrower throughout. The distance between clavicle (collarbone) and navel is less. The spine longer in the dorsal region, the waist thicker and the navel nearer the pubis. The arm is shorter and thicker, but the upper arm longer. The lower arm is of more even thickness throughout (*i.e.*, more cylindrical), the hand shorter and narrower, though the middle finger is longer. The whole limb is longer and thicker, but less markedly so in the thigh. The shin is longer but less tapering and the calf less pronounced. The foot is short, narrow, but thick at the instep."

"Among the Australian aborigines, the women had larger, higher and broader heads, *i.e.*, they were less dolichocephalic. Their faces were more prognathous and their brows lower, nose narrower and with a higher bridge and mouth larger. Compared to men of her race, the Australian native woman has a longer spine in the dorsal region, longer nape of the neck, longer, narrower, less capacious and flatter thorax, a thicker waist, higher set navel, more distant iliac bones and wider hips. Most of these differences obtain also among the Chinese and Malays. But the nape of the neck, the length of the breast bone, the chest measurement and the position of the navel are not the same. The measurements resemble most those of the Chinese. There are noticeable differences in the structure of the arms. The woman's arm is longer, both as a whole, and in the regions of upper arm, hand and middle finger, the upper arm is thicker round, the lower arm much shorter but more cylindrical in shape, the hand longer and slimmer. These measurements correspond entirely with those of the Javanese. But they differ from the Chinese, especially in the length of the whole arm and above the elbow. The Sudanese also differ from the Australians in the proportions of the hand and the whole arm."

The hair of the head appears to be longer and thicker in woman, of whatever race. In Japanese pictures, when women are represented with their hair loose, it is always depicted as very long and sometimes as trailing on the ground behind them.

Marshall mentions a peculiarity of the Toda women of India. He cites a statement that they sometimes had fine downy hair between their shoulder blades.

Karl v. d. Steinen examined the physical peculiarities of eight *Indian* tribes—the Trumai, Auetö, Kustenáu, Bakaïri, Nahuquá, Mehinakú, Kamayurá and Waurá—in the upper Xingu regions of Brazil. He found a great difference in average height between men (162.6 cm.) and women (152.1 cm.). In one tribe, the Nahuquá, all the women had very short toes and conspicuously long arms. They had longer arms than the men of their tribe and of any of the other seven tribes. The women had narrow hips and thin calves.

Krämer has made some observations on the girls and women of Samoa. The upper half of



their forms is much more beautiful in outline and proportions than the lower limbs; he says that the legs are generally too short as well as thick and heavy. The calves are strong, firm and curved and, among the young girls, the *musculus soleus* is often so thick that the region just above the ankle appears clumsy and shapeless. But all the Samoan women he saw had finely shaped and gracefully turned shoulders.

An anatomical peculiarity has been noted in Samoa, as regards the upper limbs (Fig. 101). Krämer says: "There is often a *hyperextension* of the elbow joint in these girls. The



FIG. 101.—Samoan girl with extreme extension in elbow joint. (Mus. f. Völkerkunde, Dresden.)

anatomical explanation is simple. The coronoid process is able to push forward further than normally into the deep hollow (*fovea supratrochlearis posterior*) of the *humerus*, in youthful and still cartilaginous cases. The girls constantly support their body weight on their arms, as they sit or squat on the floors of their huts, as can be observed as a matter of daily occurrence." Krämer's view still needs corroboration by the examination of an adequate number of such specimens of arm-bones from Samoa.

In the eighth German edition of this monograph, Dr. M. Bartels mentioned that he had been struck by the same peculiarity of structure in young Japanese girls, who also habitually sit or crouch or kneel on the floor and often support themselves on their hands and arms (Fig.



102). The reason is probably the same in Samoa. Therefore, we cannot consider these "double jointed" elbows as racial characteristics in the strictly biological sense: they are modifications, resulting from the adaptation to environment by persistent habit. Our knowledge of the origin of racial characteristics is still very backward owing to our imperfect understanding of the endocrine secretions. And if we could determine how the endocrines and the general metabolism determined the colouring, hair, and skin texture, and skull formation of white, yellow and black races respectively, we should also be able to discover how the secondary and



FIG. 102.—Japanese girl showing over-extension of upper arm.

tertiary differences within these race groups were evolved (*cf.* the work of Stratz,<sup>8</sup> F. von Reitzenstein,<sup>5</sup> and a good preliminary study by Paulsen<sup>1-2</sup>).

#### (f) Mortality and Numerical Preponderance among Women

In general, women have greater tenacity of life; they offer a constitutional resistance to injuries and diseases which is very clearly shown in the statistics of all European countries and Colonial Dominions, for we have available vital statistics since the middle of the nineteenth century.

Apparently, however, the majority of children born into the world are boys,





and the majority is remarkably constant, though small. The average is 105 male births to 100 female. Herewith follows a table, taken from a Report of the Director-General of the Italian Ministry for Agriculture, Industry and Commerce, in 1884. It gives the number of male births to *every hundred of female births* in most civilised countries between the years 1865 and 1883.

Country.	Ratio of Male Births.	Country.	Ratio of Male Births.
Polish Provinces of Russia . . . . .	101	Sweden . . . . .	105
England and Ireland . . . . .	104	Denmark . . . . .	105
France . . . . .	105	Russian Europe . . . . .	105
Scotland . . . . .	105	State of Vermont . . . . .	105
Prussia . . . . .	105	State of Rhode Island . . . . .	105
Bavaria . . . . .	105	Italy . . . . .	106
Saxony . . . . .	105	Ireland (alone) . . . . .	106
Thuringia . . . . .	105	Austria (Cis-leithan) . . . . .	106
Wurtemberg . . . . .	105	Croatia and Slavonia . . . . .	106
Baden . . . . .	105	Norway . . . . .	106
German Empire (total) . . . . .	105	Serbia . . . . .	106
Alsace-Lorraine . . . . .	105	State of Massachusetts . . . . .	106
Hungary . . . . .	105	Spain . . . . .	107
Switzerland . . . . .	105	State of Connecticut . . . . .	110
Belgium . . . . .	105	Roumania . . . . .	111
Holland . . . . .	105	Greece . . . . .	112

The male births preponderate in all these States and Countries and in 19 out of 32 in the same proportion—105–100.

Much has been written on the reasons of a biological tendency so widespread and constant ; but as yet no definite conclusions have been reached. As Hirschberg pointed out, the difference is almost the same in the Berlin area (100 boys born to every 94 girls). But, in his words : “ Neither the age of the parents nor the difference between their respective ages, nor any other circumstances have offered helpful clues.”

Auerbach has maintained that the difference in prenatal and early foetal existence is much greater. He declares that not only still-births, as is known to be the case (see below), but also miscarriages are much more often male, so far as their sex is ascertainable.

It is difficult to ascertain whether the same sex ratio holds good for the coloured races. Statistics are, so far, very imperfect in this matter.

The Missionary Kempe declared among the aborigines of Central Australia, in the Finch Creek district, there was a marked preponderance of female births : four girls to every one boy. His observation refers to the years between 1879 and 1882 ; it deserves mention, but has not been further confirmed.

The American Indians show quite different results, so far as is ascertainable. (Further data are added in the course of this chapter.)

Aleš Hrdlička, the American ethnologist, obtained, indirectly, the following figures for certain Indian tribes of the South-West and Mexico. During their reproductive ages 37 women of the San Carlos Apaches brought forth 53·49 per cent. boys and 46·5 per cent. girls. This would mean a very high male preponderance : 115–100. And 35 Pima women produced 52·84 per cent. boys and 47·16 per cent. girls ; just over 112 (112·1)–100.

The excess of male births in Japan is recorded statistically (Rathgen). The proportion is said to be 104·75–100 girls ; practically the same as in the white race.

So much for the sex ratio at birth. But, in many countries the adult ratio is exactly the reverse. There is a large excess of women.



Among the coloured races there is said to be no such excess. This had been confirmed by comparatively recent statistics collected and issued by the Governments of Japan and China. Baelz <sup>5</sup> says that the Chinese statistics refer to nine provinces, with 87,000,000 inhabitants; as the ratios are almost the same for all the provinces, even the most mutually distant, they may be accepted as probably correct. The Census taken by the Japanese for Korea in 1910 was used in this Report. Baelz <sup>2</sup> gives the following statistics:

## SEX RATIO FOR ASIATIC POPULATIONS

Proportion of Women to every 1000 men in:

Japan . . . . .	980 women to 1000 men.
British India . . . . .	960   "   "   "
Siberia . . . . .	943   "   "   "
The Caucasus . . . . .	901   "   "   "
Korea . . . . .	885   "   "   "
Russian Central Asia . . . . .	851   "   "   "
China . . . . .	801   "   "   "

Thus, there is apparently a great numerical preponderance of men in Asia.

Baelz believes that this is not due to any special surplus of male births, as compared to Europe, but to the lower estimate of women in their social position. There is also the widespread custom of female infanticide, but Baelz claims that this is only prevalent in certain provinces and not throughout China. Moreover, the balance is partly restored by the large amount of Chinese male emigration. And we must also remember that the number of women of the household are often intentionally concealed from the Census officials: this is undoubtedly often the case in India, according to R. Kirchhoff. In the Indian Census of 1901 there were, in the British provinces of India, 117,804,942 men and 114,094,565 women; in the native provinces, 32,146,882 men and 30,314,667 women: thus, in all, the population of Hindustan was 149,951,824 men and 144,409,232 women. There was thus a male surplus of 5,542,592. This corresponds to Baelz's table and implies a ratio of 963 females to 1,000 males. Even allowing for the prevalence of female infanticide, the figures are large.

Hrdlička has compiled detailed statistics on the sex ratio of the American aborigines in the South-Western United States. His figures are based on the U.S.A. Census returns of 1890 and 1900 and on the *Reports* of the Commissioner of Indian Affairs.

TABLE

*Sex Ratio (number of Males to each 100 Females) of the Indian Tribes in the South Western U.S.A. Especially New Mexico*

Among the Whites in these States	Utah . . . . .	124.2
sex ratio is . . . . .	IV. Pueblos:	
I. Mainland Indians . . . . .	Hopi . . . . .	101.6
Southern Ute . . . . .	Zuñi . . . . .	102.4
II. Apache:	Rio Grande Pueblos . . . . .	119.3
White Mountain . . . . .	V. Papago: Arizona . . . . .	110.1
San Carlos . . . . .	VI. Pima: Arizona . . . . .	102.8
Mescalero . . . . .	VII. Maricopa . . . . .	111.4
Jicarilla . . . . .	VIII. Mohave:	
Walapai . . . . .	Colorado River Agency . . . . .	108.3
Havasupai . . . . .	Fort Mohave . . . . .	112.3
III. Navaho:	IX. Yumas.	
Arizona . . . . .	San Carlos Reservation . . . . .	114.1
New Mexico . . . . .	Yuma Reservation . . . . .	120.3



The smaller number of men among the Apaches is ascribed by Hrdlička to their warlike history. The comparatively quiet and peaceful Rio Grande Pueblos, Yuma, Papago, Mohave and Maricopa have a pronounced excess of men.

The European adult sex ratio differs from the sex ratio at birth. The male surplus is turned into a female. The ratios are 102·1 : 100 or (according to Prinzing) 102·5 : 100. Prinzing and G. Sundbörg compiled the following tables some 30 years ago and they are typical of pre-war conditions. The numbers in brackets are those put forward by Baelz <sup>5</sup> in 1911, and have been added for purposes of comparison :

#### SEX RATIOS OF THE POPULATIONS OF EUROPE

To every 1000 men in :					
Germany . . .	1032 women	(1032)	Russia (without		
Austria . . .	1035 „	(1035)	Poland) in year		
Hungary . . .	1009 „	(1024)	1897) . . .	1025 women	(1029)
Switzerland . .	1035 „	(1029)	Roumania . . .	974 „	
France . . .	1022 „	(1022)	Bosnia (in year		
Belgium . . .	1013 „	(1015)	1897) . . .	893 „	
The Netherlands	1022 „	(1017)	Serbia . . .	945 „	(943)
Great Britain and			Bulgaria . . .	966 „	(958)
Ireland . . .	1063 „	(1070, 1016)	Greece . . .	921 „	(986)
Denmark . . .	1054 „	(1058)	Crete . . .	962 „	
Norway . . .	1060 „	(1064)	Italy (in year		
Sweden . . .	1050 „	(1049)	1901) . . .	1009 „	(1010)
Finland . . .	1020 „		Spain . . .	1049 „	(1049)
			Portugal . . .	1090 „	

[Let us compare these figures with some later results. The figures below are estimates from various countries of 1921 sex proportions with some 1911 estimates for comparison. Countries marked (a) are estimated from censuses of 1910 and 1920 ; (b) censuses of 1909 and 1920 ; and (c) censuses of 1910 and 1919. Thus :

To every 1000 men in

	1921	1911		1921	1911
Canada . . .	940	886 women.	Denmark . . .	1053	1061 women.
Indian Empire . .	945	954 „	Hungary . . .	1062	1007 „
New Zealand . . .	956	896 „	Spain . . .	1062	1056 „
Union of S. Africa .	959	946 „	Switzerland (a) .	1074	1034 „
United States . . .	961	943 „	Czecho-Slovakia .	1075	1056 „
Australia . . .	967	926 „	Scotland . . .	1080	1062 „
Bulgaria (a) . . .	1002	961 „	Austria (a) . . .	1089	1023 „
Netherlands (b) . .	1013	1021 „	England and Wales	1096	1068 „
Belgium . . .	1033	1018 „	Germany (c) . . .	1099	1026 „
Sweden (a) . . .	1037	1046 „	Portugal (a) . . .	1113	1107 „
Norway (a) . . .	1053	1070 „			

In 1931 the estimate for England and Wales was 1087.]

In the first list the Balkan countries are the only exceptions to the pre-war numerical preponderance of women. What are the causes of this disparity ?

They are various, for some European countries send large numbers of emigrants into other continents : *e.g.*, Great Britain, Germany and Scandinavia. And thus there is, or was, a perpetual drain on their young and vigorous men. But migration is only one factor among many. There is no doubt that boys, when infants, are more delicate and difficult to rear than girls. And, in adult life, men, except in certain classes of urban population, are exposed to more violent and, on the whole, more frequent accidents than women, industrial, vocational, and as a result of certain



devastating diseases. Woman, as Mayr has pointed out, runs great risk in pregnancy and child-birth, and the mortality here is significantly high, though slowly decreasing. So is subsequent damage and invalidism. But, on the whole, even apart from war, man lives quicker and at higher pressure, and both generates and uses up nerve force more rapidly. The figures for criminality are instructive : male criminals are (or were) five times more numerous than female, according to the statistics of prisons and convictions. Mayr also emphasises the larger number of elderly women in European towns, so that women's total longevity greatly exceeds man's. Nolen found interesting differences in predisposition to diseases. He was of opinion that the male constitution inclined rather to diseases of the autonomous nervous system and to those associated with retarded metabolism ; while the female constitution tended towards illnesses of thyroid origin and also of the sympathetic nervous system. The immediate causes were respectively sluggishness of thyroid function in men, and its excess in women.

The greater longevity of women implies a lower death-rate, even apart from war.

This may be seen in the following summary, which has been compiled for the years 1865–1883. It shows the male deaths in proportion to every hundred (100) deaths of women.

State of Rhode Island . . . . .	97	England and Wales . . . . .	107
State of Vermont . . . . .	98	Croatia and Slavonia . . . . .	107
State of Massachusetts . . . . .	99	Spain . . . . .	107
Scotland . . . . .	100	Bavaria . . . . .	108
Ireland . . . . .	100	Austria (Cis-leithan). . . . .	108
Alsace-Lorraine . . . . .	102	Hungary . . . . .	108
State of Connecticut . . . . .	102	Switzerland . . . . .	108
Norway . . . . .	103	Belgium . . . . .	108
Denmark . . . . .	103	German Empire (total area) . . . . .	109
Finland . . . . .	103	Prussia . . . . .	109
Sweden . . . . .	104	Saxony . . . . .	109
Holland . . . . .	105	Thuringia . . . . .	109
Russia in Europe . . . . .	105	Greece . . . . .	111
Italy . . . . .	106	Serbia . . . . .	112
Württemberg . . . . .	106	Roumania . . . . .	116
France . . . . .	107		

[For 1927 and 1928 the difference between the male and female death rates, taken on a rate per 1000 of the average population of the same sex, was :

United States . . . . .	— 1.5	Greece . . . . .	+ 1.1
Italy (1927) . . . . .	— 0.45	Finland . . . . .	+ 1.5
Sweden (1927) . . . . .	— 0.25	England and Wales . . . . .	+ 1.6
Denmark . . . . .	+ 0.1	Belgium . . . . .	+ 1.11
Netherlands . . . . .	+ 0.2	Czecho Slovakia . . . . .	+ 1.47
Norway . . . . .	+ 0.4	France . . . . .	+ 2.4
Germany . . . . .	+ 1.1		

Again, the male death rate is considerably higher in the majority of the countries tabulated.]

Thus we find, in the above lists, that Scotland and Ireland show equal male and female death rates, and Rhode Island, Vermont and Massachusetts a higher death rate among women. In the remaining 26 instances the male death rate is higher, and sometimes very much higher.

We have seen that the male mortality begins during foetal life. Many more boys are still-born than girls. This is true of all countries in which statistics are compiled and collated.



Bucura studied the conditions of 40,169 births between the years 1893–1904. His results extended and corroborated the finding of Fliess and Düsing for Prussia (1875–1887) and Rosen \* for Denmark (1835–1849). The still-born boys were conspicuously numerous. Taking still-births into account, the ratio of male infants was 129 to 100 girls. (We have already seen that the proportion in live births is 105 : 100 among most European countries.) But, when we analyse these still-births, the result is even more surprising. Bucura divided the still-births into those of infants newly dead and hence, in all probability, dead in the process of birth, and those which had been dead for long enough to show signs of decay. These latter are termed macerated foetuses (see C. J. Thomson <sup>2</sup>). Bucura found a very constant predominance of macerated male children in the proportions of approximately 115 to 100 girls. Thus, both in normal live births, still-births and premature births, the boys are more numerous and an appreciably greater number die, either when in the womb or in the process of birth.

Certain other investigations do not correspond with Bucura's, however (Collin and Le Maire). In both cases there was an excess of male children in those newly dead at birth, but Collin found more girls among the macerated. Le Maire claims that maceration may ensue during protracted births. The larger heads (and size generally) of boys makes male births more difficult, other things being equal. Prematurely expelled embryos in the earlier months of prenatal life show, so far as can be ascertained, no preponderance of either sex.

The mortality of male children in their first year is very great. Hirschberg computed the figures for Berlin, in the year 1900. He found that at the end of one year, out of 1000 (one thousand) births of either sex (including still-births), there were 714 boy survivors and 754 girls.

Statistics have been compiled showing survival rates for each five years of life after the first.

Many further statistics show the greater longevity of women in a striking manner. On December 1st, 1900, Prinzing came to the following results in his investigations of the relative numbers of men and women in the German Empire :

#### NUMBER OF FEMALES TO 1000 (A THOUSAND) MALES IN THE FOLLOWING AGE GROUPS

Under 5 years . . . . .	993	Between 41 and 45 . . . . .	1045
Between 6 and 10 . . . . .	998	„ 46 „ 50 . . . . .	1067
„ 11 „ 15 . . . . .	995	„ 51 „ 55 . . . . .	1121
„ 16 „ 20 . . . . .	995	„ 56 „ 60 . . . . .	1140
„ 21 „ 25 . . . . .	1008	„ 61 „ 70 . . . . .	1189
„ 26 „ 30 . . . . .	1008	„ 71 „ 80 . . . . .	1259
„ 31 „ 35 . . . . .	1014	„ 81 „ 90 . . . . .	1338
„ 36 „ 40 . . . . .	1020	Over 90 . . . . .	1751

Thus, after 20 years of age there is a steady increase of women in the age groups, as they ascend towards old age.

Later figures for England and Wales (1921), Germany (1919), and the Netherlands (1920) show :

Age Groups.	England and Wales.		Germany.		The Netherlands.	
	♂	♀	♂	♀	♂	♀
All ages . . . . .	477	523	476	524	497	503
Under 5 . . . . .	44	43	32	31	58	56
5 and under 10 . . . . .	47	46	54	54	55	53
10 „ 20 . . . . .	94	95	111	111	102	100
20 „ 40 . . . . .	142	168	138	170	148	151
40 „ 60 . . . . .	109	119	103	110	93	97
60 „ 80 . . . . .	39	48	36	45	38	42
80 and upwards . . . . .	2	4	2	3	3	4

\* [No reference is given.]



The inhabitants of modern Greece are noted for their number of long-lived persons. B. Ornstein<sup>2</sup> found a similar preponderance of women among the most advanced age groups.

The official Greek statistics for 1878-1883 showed a population numbering 1,653,767, and of these 5297 had passed the age of 85 and 459 the age of 100: of these 459 centenarians, 188 were men and 271 women.

Prinzing is inclined to attribute this disproportion to sociological (*i.e.*, artificial) rather than biological causes. His figures give much support to this view. He also compares the modern diminution of deaths in child-birth to former conditions. For instance, in the Kingdom of Prussia the deaths per 1000 child-bearing mothers were as follows, in the following years:

	Per 1,000 Women in Childbed.	Per 1,000 Women Inhabitants.
1877-81 . . . . .	5.8	0.46
1882-86 . . . . .	5.8	0.44
1887-91 . . . . .	4.5	0.34
1892-96 . . . . .	3.9	0.29
1897-1900 . . . . .	3.1	0.23

Available statistics of non-European races are very scarce in this respect. But we possess a few figures of some interest.

The Ainu, in Yezo, according to figures supplied to Hitchcock by John Batchelor, show a slight but constant numerical preponderance of women (in 1882, 8546 men, 8652 women; in 1885, 7900 men and 8063 women).

Engelhard recorded a marked excess of women in Saleijer, an island of the Malay Archipelago, south of Celebes (2035 men and 3337 women). The Solomon Islands, or rather two of this group, Ugi and San Cristobal, had more men than women (according to Elton), and in Japan (in the year 1885), Rathgen recorded only 18,711,110 women to 19,157,977 men.

In Cochin China, so Cadière states, the people believe that men have seven "life spirits" apiece and women nine. They perform relevant ceremonies on and with the newborn child.

The total population of the globe has been estimated as follows by Gulischambarow (who however, pointed out that such an estimate could only be tentative).

#### IN THE YEAR 1911, AND RECKONED IN MILLIONS

	♂	♀	Total.
Countries with more women than men ♀ . . . . .	268	277	545
Countries with more men than women ♂ . . . . .	254	239	493
Countries in which there are no statistics of difference . . . . .	—	—	617
Increase of population 1906-08 . . . . .	—	—	45
Totals in Millions . . . . .	522	516	1700

He made further elaborate calculations for each main country and district of the earth's surface and for the year 1911; but 662,000,000 were not therein accounted for out of his estimated total of 1,700,000,000. We will here give the summaries of his estimates for each Continent in millions.



Continent.	Men.	Women.	Total.	Number of Women per 1,000 men.
Europe . . . .	205·0	210·6	415·6	1027
Asia . . . .	225·5	217·0	442·9	960
Africa . . . .	19·9	20·8	40·7	1045
America . . . .	67·5	65·1	132·6	965
Australasia . . . .	3·2	3·0	6·2	937
Totals . . . .	521·1	516·5	1038·0	990

Of course, these figures are *pre-war*. The devastation and destruction of 1914–1918 and the long and widespread starvation and anarchy in many parts of the world following the war, must have had great effects here, and must particularly have decimated the adult male population. In countries of high economic and sociological evolution this has led to a serious biological unbalance ; an unbalance which will no doubt eventually be made good by the greater number of male births, but which must be taken into consideration alike by scientists and by statesmen, for this contemporary numerical excess of women coincides with their entry into professions and their political enfranchisement.

Fehlinger <sup>1</sup> shows that, owing to the greater number of male births, there are more boys and young men than girls and young women, among the German population, up to the twenty-third year of age. From 23 to 40, the numbers are approximately equal. Over 40 the number of women is progressively greater. Döring has worked out the numerical ratio in greater detail, thus :

Number of Women to every 1000 men in :

	1913.	1919.		1913.	1919.
Germany . . . .	1024	1090	Belgium . . . .	1017	1047
Austria Hungary . . . .	1027	1092	Bulgaria . . . .	966	996
Great Britain and Ireland . . . .	1069	1094*	Roumania . . . .	974	1016
France . . . .	1036	1120	Serbia . . . .	937	1339
Italy . . . .	1037	1070	European Russia (incl. Poland . . . .)	1020	1060
Total Averages . . . .				1026	1080

\* The provisional estimate for 1931 was 1087 for England and Wales.

The disproportion is even greater—with the exception of Bulgaria—if we compare persons of marriageable age only, as Schweisheimer remarks.

*Number of Women between 18 and 45 to every 1000 Men between same Ages*

Country.	1913.		1919.	
	No.	Female Excess per cent.	No.	Female Excess per cent.
Germany . . . .	1005	0·5	1180	15·3
Austria Hungary . . . .	1048	4·6	1230	18·7
Great Britain and Ireland . . . .	1078	7·2	1175	14·9
France . . . .	1017	1·7	1230	18·7
Italy . . . .	1109	9·8	1228	18·6



## CHAPTER II

### WOMAN IN HER PSYCHOLOGICAL ASPECT

#### 1. THE SEXUAL IMPULSE

“Between two beings so complex and so diverse as man and woman, the whole of life is not too long for them to know one another well, and to learn to love one another worthily.”—*Auguste Comte*.

WE have now discussed the various sexual differences. There remains the sexual impulse to be considered.

Here is clearly apparent the interplay between endocrine secretions and nervous system. The human nervous system can be divided into three categories :

- (1) The *Sensory* (the stimuli), within and by which the direction of desire is settled.
- (2) The *Associative* (whereby the stimuli spread). These include harmonic factors, which are, of course, ultimately based on chemical changes ; and psychic factors (Mnemonic images (or memories), Mnemonic Complexes and Emotions).

There are two tendencies or great emotional currents here :

(a) The *Synergistic* or *Affirmative*.

(b) The *Antagonistic* or *Inhibitive*.

- (3) The *Motor* (which, unlike the other two main *categories*, is influenced by the conscious mind and will). This includes the actual reflexes and actions of the sexual impulse (*Contractation* and *Detumescence*).

A brief outline of the human nervous system is essential to the proper grasp of these distinctions. Detailed descriptions of the nervous system are included in every standard work on physiology.

#### (a) General Outline

The majority of investigators are agreed that the nervous system is composed of cells of a special type possessing processes of varying length by which they are interconnected. The cells are termed neurones and the interlacing processes fibres. Both in the cells and the processes very minute and delicate strands are distinguishable, and these are known as *fibrils*, and the special protoplasmic substance composing the neurones, as *neuroplasm*. In the individual *neurones* there is a substance resembling the chromatin of the gametic nuclei, known as tigroid and which has been supposed to be used up or consumed if the nervous system is subjected to great strain.

Two nervous systems can be distinguished : the *peripheral* and the *central*.

The neurones are not evenly distributed throughout their course, but in certain areas they are grouped together in numerous clusters known as *ganglia*.

The peripheral nervous system has minute terminal twigs or *rami*. They are divided into centripetal or afferent fibres, also known as sensory ; and centrifugal or efferent, also known as motor fibres.

The centripetal or afferent nerves may be divided into two groups : one receives and transmits sensations of pressure, warmth, cold, pain and what can only be



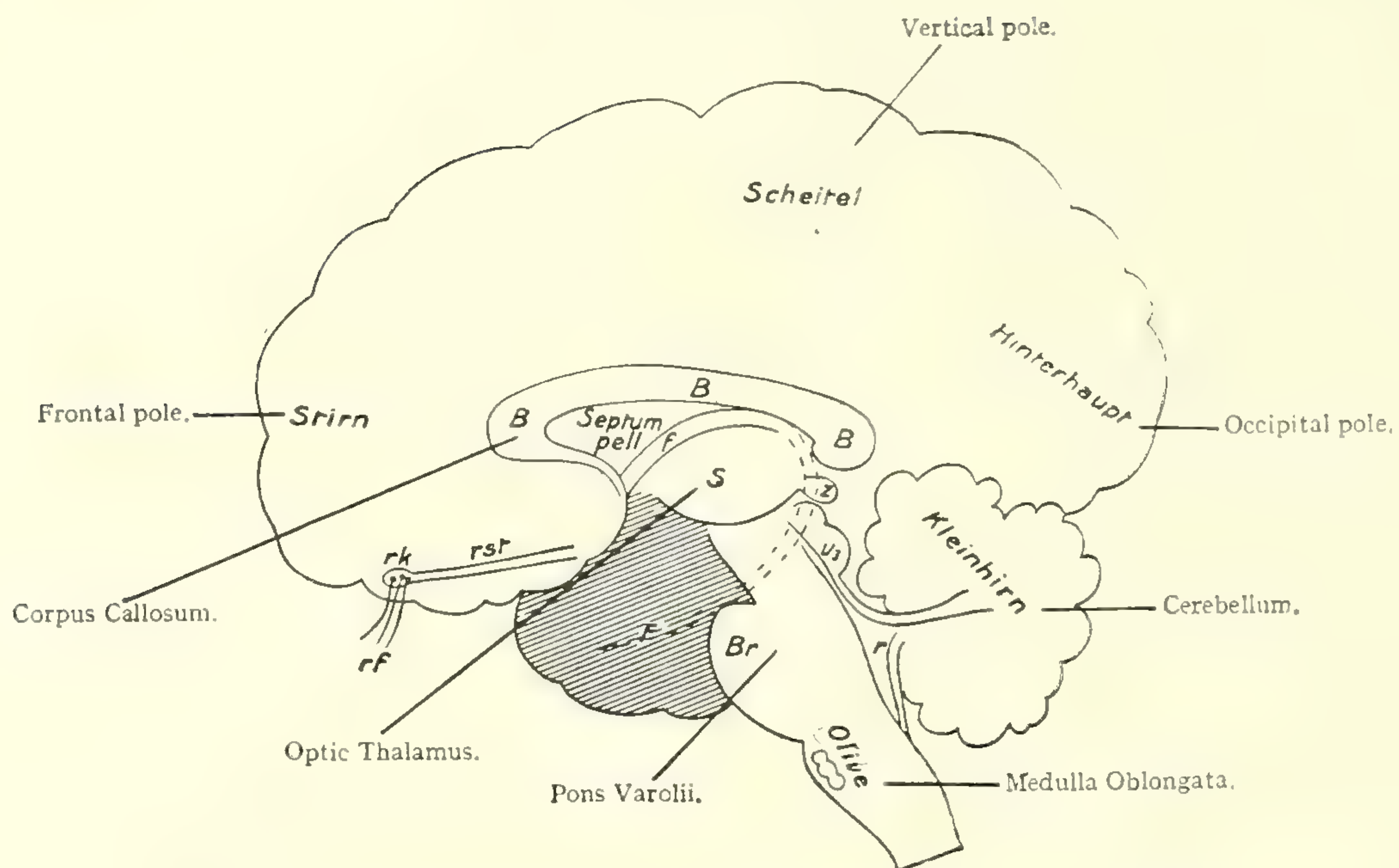


FIG. 103.—Medial aspect of right half of the brain. (After Pfeifer.)

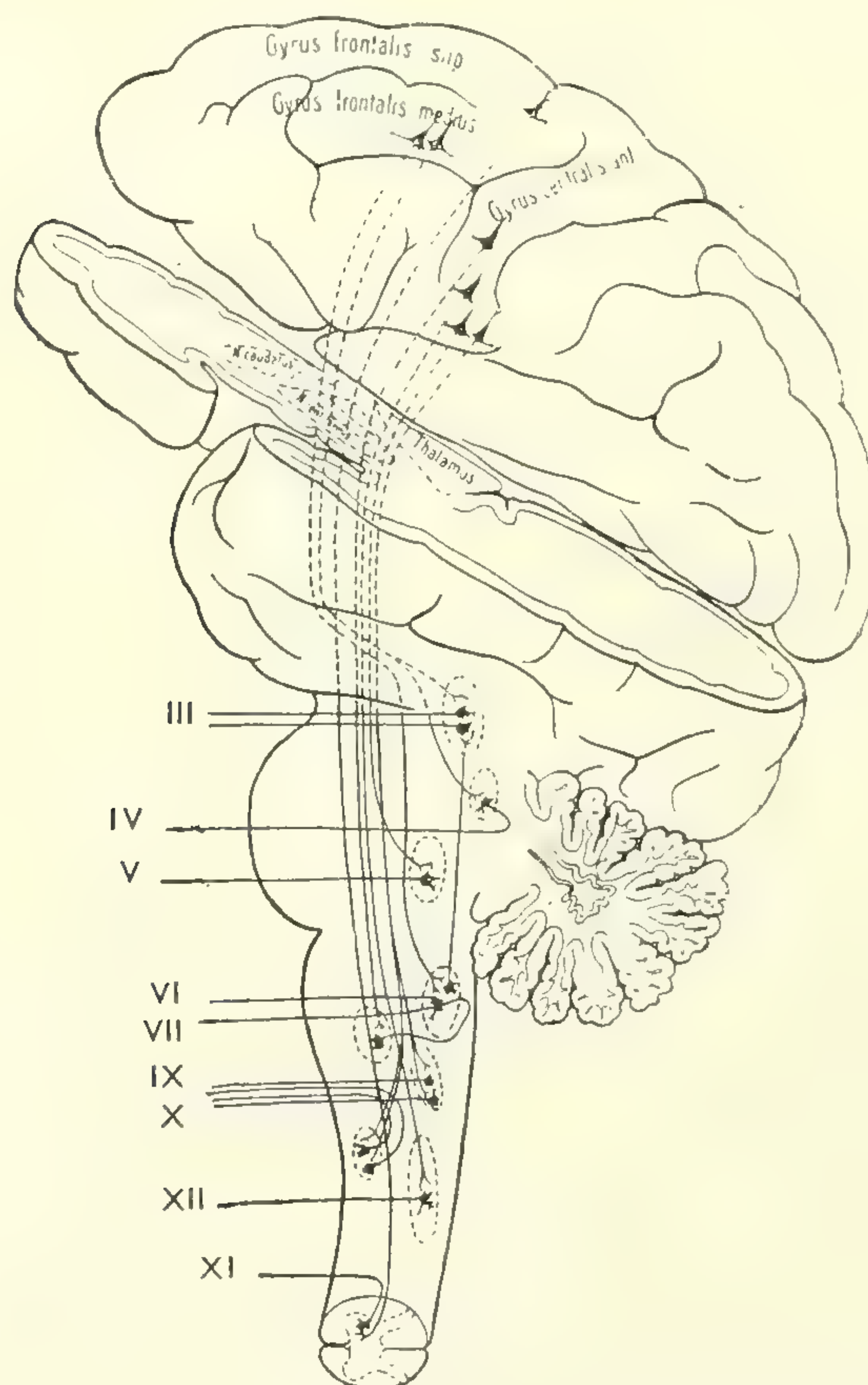


FIG. 104.—Origin and intracerebral course of motor cranial nerve. (After Bechterev.)

described as "muscular sense." The other group is specifically sensory, *i.e.*, it is more highly differentiated and includes the nerves of eyes, ears and palate. The centrifugal or efferent nerves send the impressions received from the various stimuli



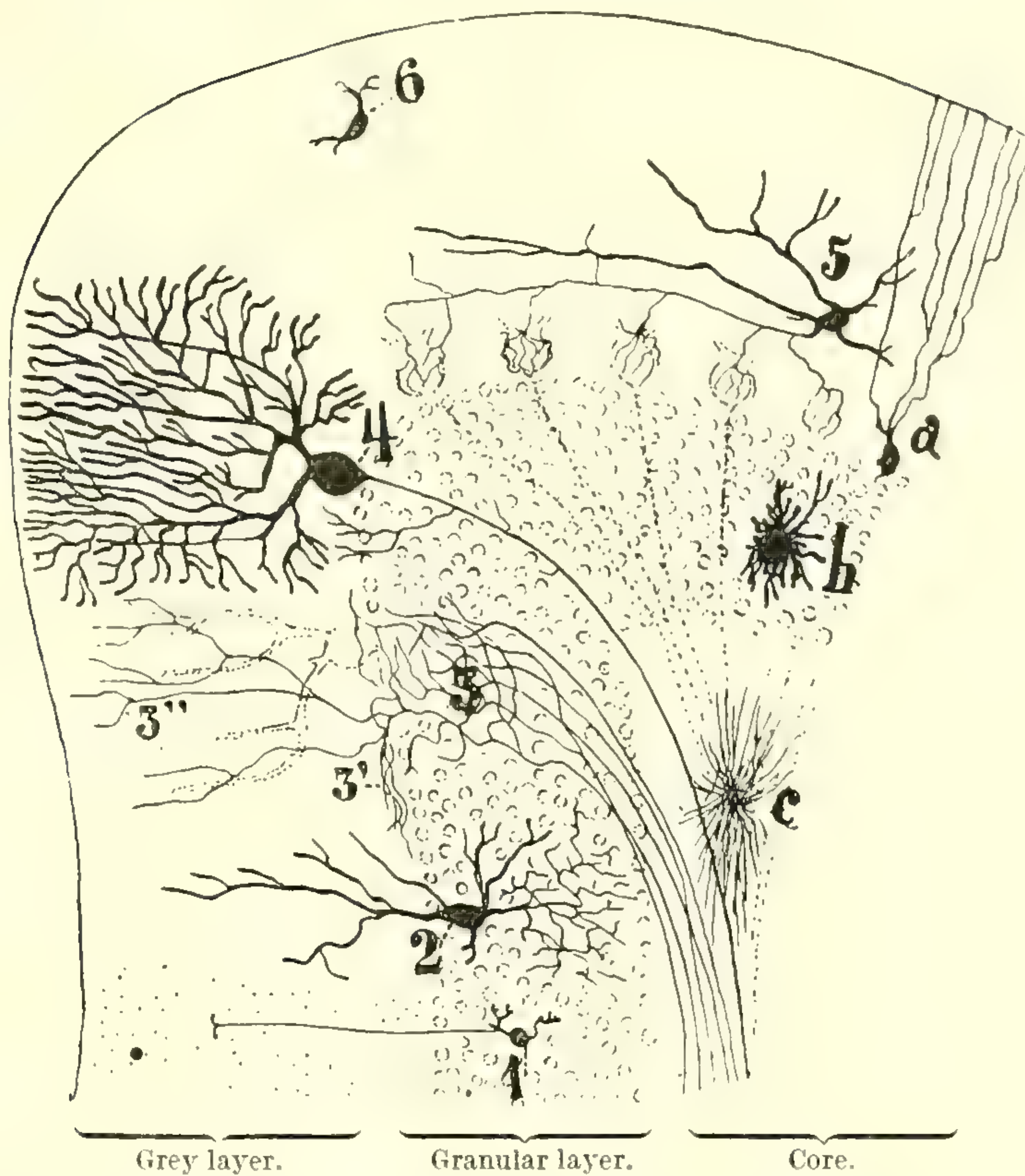


FIG. 105.—Transverse section through a cerebellar folium. (After Stöhr.) (1) Small granule cells; (2) Large granule cells; (3) Nerve fibres; (3') Horizontal fasciculus; (3'') Fasciculi of grey layer; (4) Cells of Purkinje; (5) Basket-cells; (6) Small cortical cells (their nerve process is not shown). (a) Neuroglial cell of grey layer; (b) Short branches of neuroglial cells; (c) Long branches.

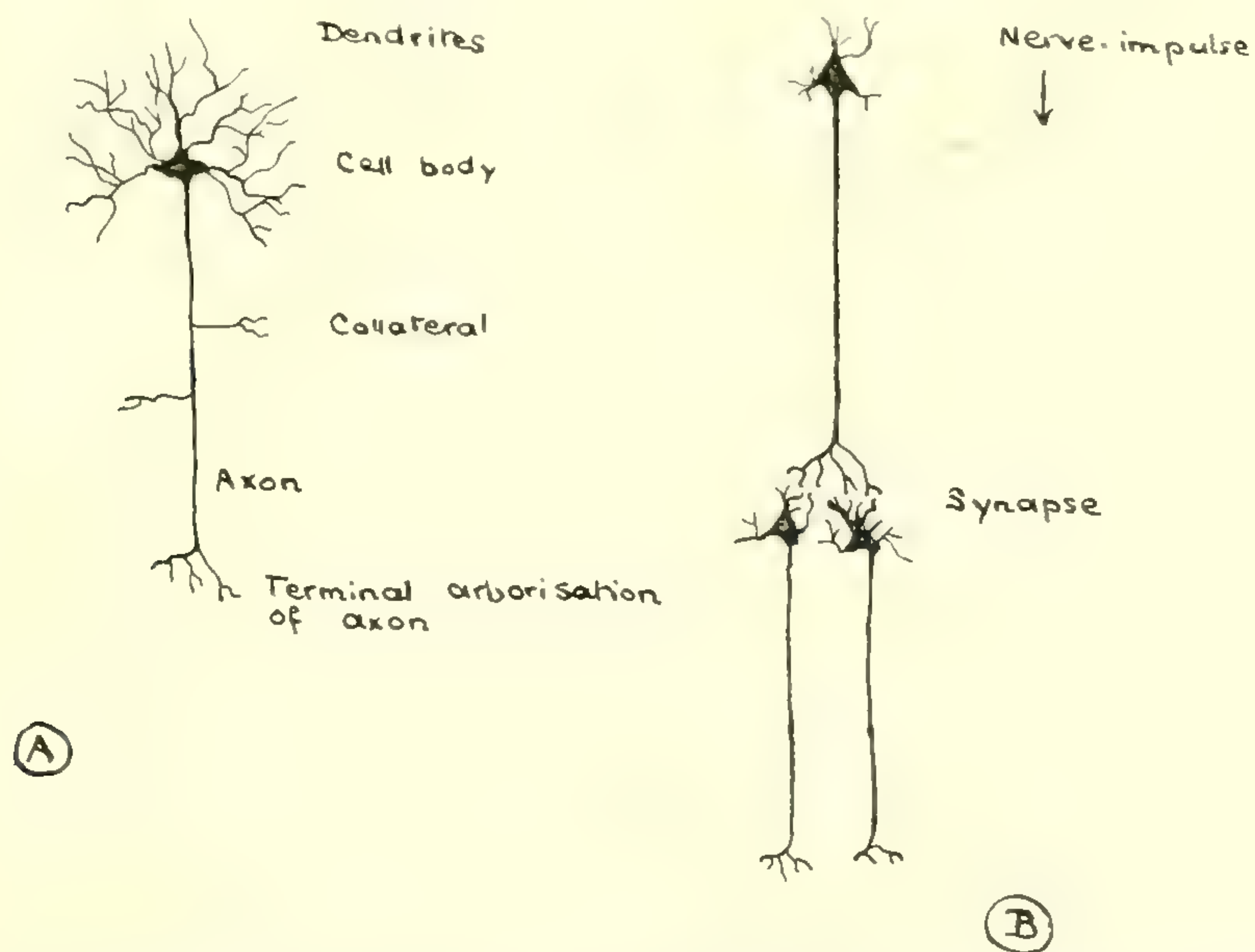


FIG. 106. (A). Section illustrating the human cerebral cortex. (B). Diagram of the arrangements of the layers of cells in the cerebral cortex. (1) Cajal cells. (2, 2') Small pyramidal cells. (3) Large pyramidal cell. (4) Polymorphic cell. (5, 5') Cells of Golgi type. (6) Surface ending nerve fibres. (a, b) Neuroglia cells.



from the central nervous system to the other organs: they consist of motor, secretory and inhibitive nerves. The motor nerves transmit the stimuli received to the muscular system, which consists of two different kinds of fibres: the striped or voluntary and the smooth or involuntary. The nerves of the smooth or involuntary muscles belong to a special or autonomous system, interconnected with but not directly dependent on the central nervous system or brain, and supplying blood

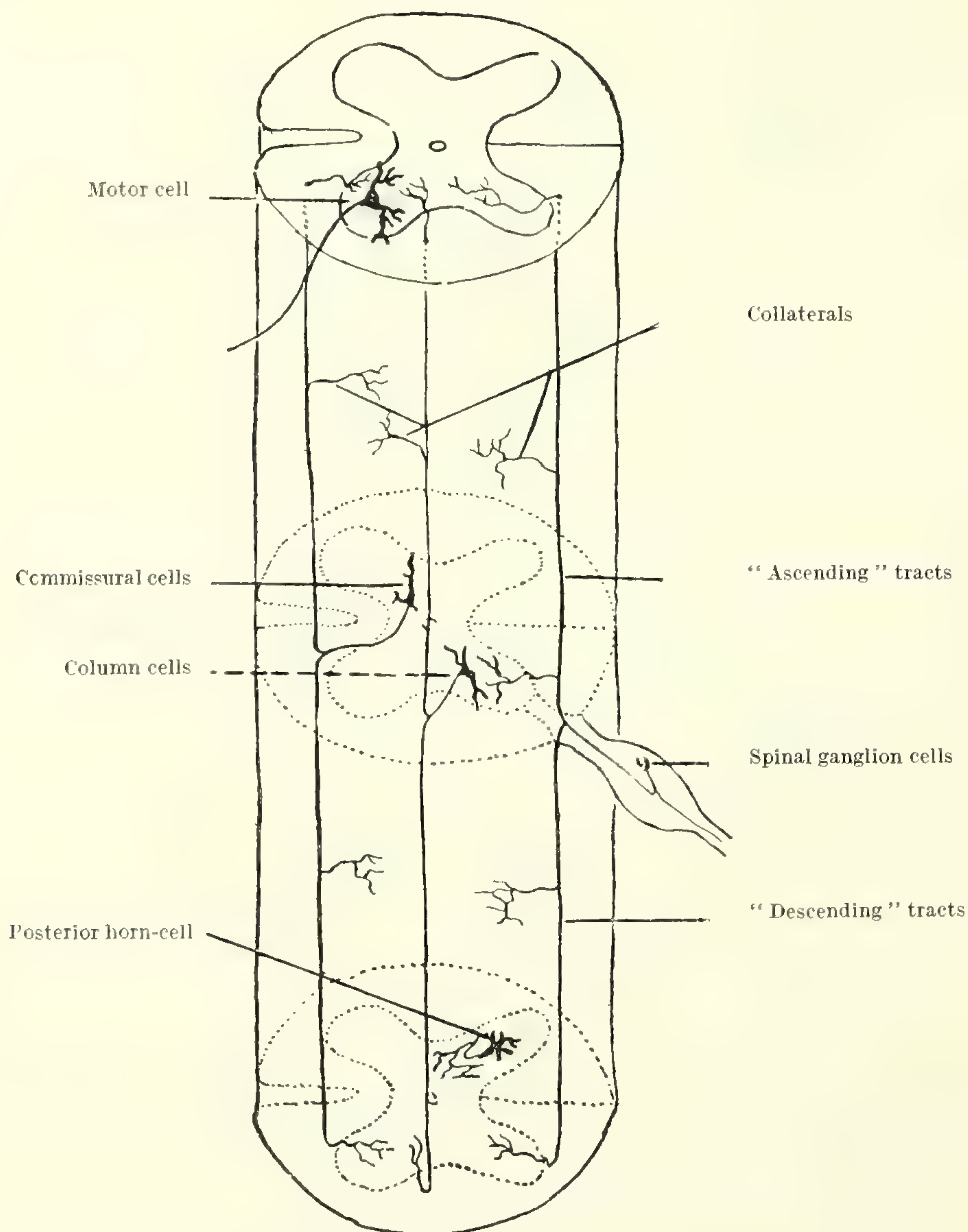


FIG. 107.—Diagram showing position and course of nerve cells in the spinal cord. (After Stöhr.)

vessels, intestines and glandular structures. Two systems or sets of nerves may be distinguished in this group. They are known as the sympathetic and para-sympathetic. Both are rich in ganglia; the secretory nerves are included in the autonomous group. The inhibitive nerves check or moderate bodily movements.

The central nervous system culminates in the brain and extends along the spinal cord. Genetically it is most accurate to divide it into the *Palæncephalon* (old Brain), which is common to all vertebrates, and the *Neencephalon* (new Brain),



which evolves beside the Palæencephalon in all species from the amphibia upwards.

The palæencephalon consists of the spinal medulla, the medulla oblongata, the cerebellum, the mid-brain or mesencephalon, the thalamus, the corpus striatum and the olfactory lobe.

The spinal medulla (Figs. 107, 108) has a grey and white substance : the latter encloses the grey in a sheath, and transverse microscopic section of the marrow shows that the grey substance has a regular pattern, somewhat resembling the letter **H**. The vertical bars of the **H** are termed horns or roots, and are grouped as dorsal and ventral ; and each spinal nerve is attached to the spinal cord both dorsally and ventrally. The spinal nerves are arranged in pairs along the spinal cord, a pair to each segment of the spine. The centripetal or afferent nerves—those which

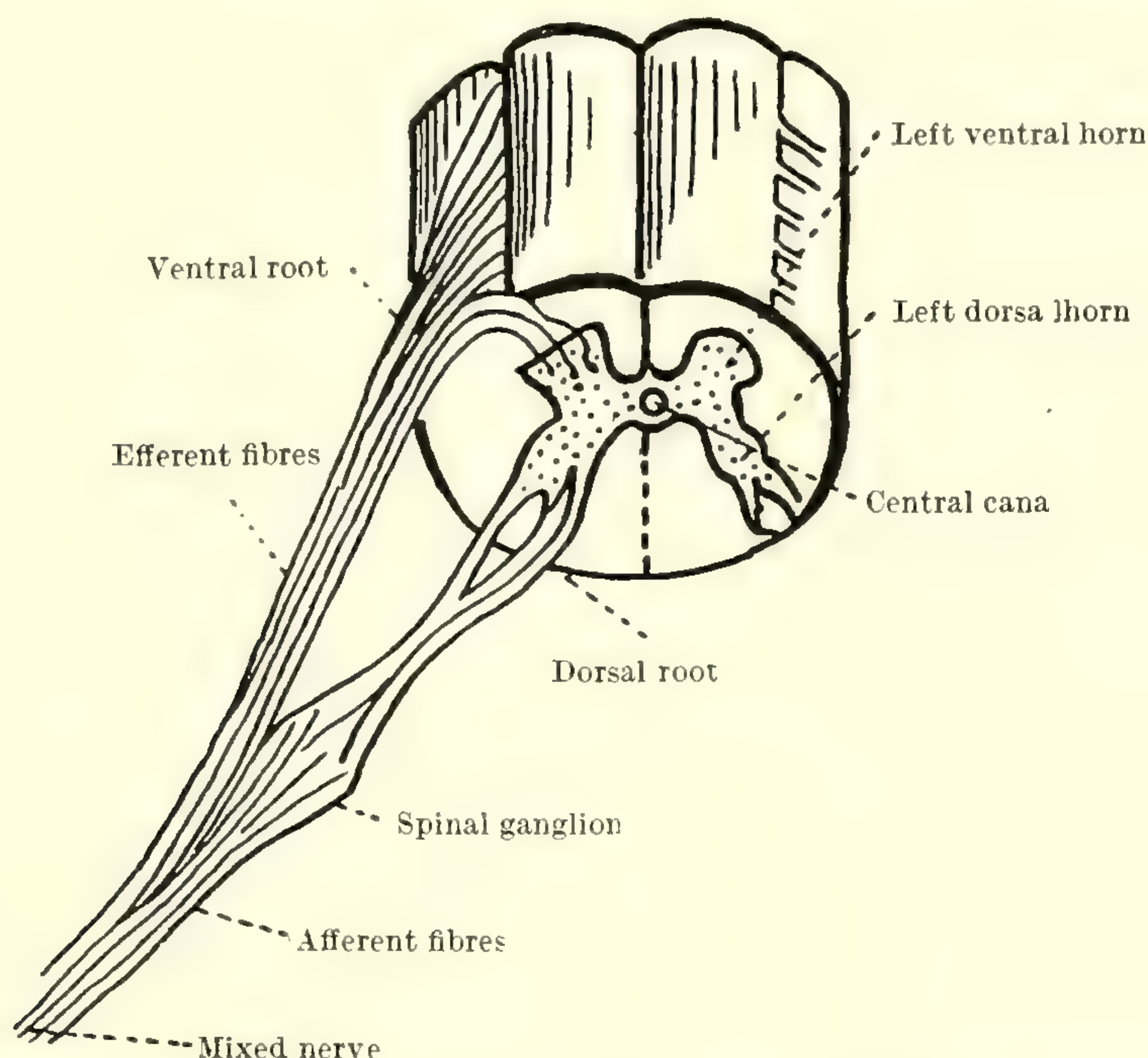


FIG. 108.—Schematic section through the spinal cord. (After Edinger.)

convey the sensory stimuli to the spinal cord—pass into the two rear bars of the **H**, *i.e.*, into the dorsal roots, and send stimuli to the front bars or ventral roots, which convey them to the centrifugal and motor nerves and thence to muscles, glands, etc. Thus is formed a circuit or path of reflexes. But there is also a connection with the higher centres, through the white substance and the medulla oblongata ; by this route the various nervous stimulations are conveyed to the pyramidal cells of the cerebral cortex or neopallium. Within this most recently evolved portion of the brain the spinal reflexes are transmuted, rearranged, modified or inhibited, and then sent back to the spinal marrow and externalised thence by way of the centrifugal nerve channels—as movements and actions.

### (b) The Sensory Factors

(The direction of impulse)

All external stimuli are received by the senses, of which the number is commonly accepted as five : smell, taste, sight, hearing and touch. This is, however, quite



an inadequate view: modern research distinguishes about 20 senses in the human race: we know, for instance, that taste and touch may be analysed into several distinct constituents, and smell, although the least studied and investigated of all, is also probably much more intricate than was formerly supposed. Every external impression received through the senses is registered in the form of an excitement, excitation or stimulus. And the central nervous system "interprets" these sensory stimuli as *emotions* or conscious *sensations*.

Moreover, if the living substance of the nervous system be subjected to excitation, electric currents may be observed. The region at rest is here positive to the region in activity (Action current). We may assume that energy leaks into the adjacent areas; thus, if a sensory nerve is excited there is an effect on its corresponding motor nerve, providing either a muscular twitching or a complete circuit. But if the motor nerve is electrically excited there is no similar response on the sensory side. Therefore, we conclude that every functional sensory nerve must have the property or faculty of transforming latent or kinetic (active) energy received from without the body into the particular synthesis of forces which we term *nervous excitation* (Fröhlich<sup>1</sup>). But there are also conscious sensations which are not provoked by the impact of stimuli from outside the body, but arise within the body itself as a result of organic processes, such as hunger, thirst, fatigue and the functions of evacuation from bladder and bowels. And these primitive organic processes are connected with definite feelings of some degree of either pain or pleasure.

The sense organs—or rather their nerves—have a further peculiarity; their degree of receptiveness to special stimuli varies very widely; this is termed a specific disposition, and this receptiveness is not necessarily associated with either pleasurable or disagreeable sensations, though both types of sensation often accompany any heightening of stimulus; or, again, a stimulus may be painful in a slight measure and pleasurable when its acuteness increases—a fact of much significance in sexual matters—or the reverse. Stimuli are described as either adequate or inadequate.

And for every kind of stimulus there is a certain degree of intensity at which it becomes perceptible. Thus there are degrees of light which do not affect our eyes. The limit of stimulus capable of becoming perceptible to our consciousness is termed its threshold. There is great diversity here, both among various species of living creatures and among individuals of the same species, especially as between human beings.

Thus, in olfactory sensations the threshold of consciousness is reached much sooner in dogs than in human beings.

We will now examine the most important sense organs from our special point of view.

Taste is probably the least prominent. Even in cunnilingus and similar practices, the sensations are probably tactile and olfactory.

Neither is hearing so important, though there are great individual differences in this respect. The particular tone, pitch and modulation of a voice may have intense erotic attraction. Musical compositions, particularly on stringed instruments, have this power to an even higher and more widely compelling degree; some works—particularly orchestral—are definitely erotic.\* Of course the sense of hearing is the receptive agent in erotic anecdotes and descriptions and jokes, but the substance of these is assimilated and associated by the cerebral cortex, and thus

\* Cf. Chapter III., pp. 24–26, in "Ideal Marriage: Its Physiology and Technique," by Dr. Th. H. Van de Velde. (William Heinemann (Medical Books) Ltd.)



the type of stimulation here is complex, depending on memory and fancy, and not directly sensory.

Sight is extraordinarily important in relation to sexual impulse in civilised mankind to-day. But here, too, it is not so much the crude material as the finished product of mental association, imagery, memory and suggestion. And according to the standard or concept of beauty, racially or individually accepted, sight may be the chief agent of sexual selection. But here, too, association is inextricably interwoven with perception and stimulation. Thus the heterosexual person finds the opposite sex physically attractive, emotionally interesting; the homosexual, their own sex; the fetichist, some object—feet, hair, articles of clothing; and the anti-fetichist and moralists find satisfaction in destroying or polluting whatever is attractive and enjoyable to their fellow creatures.

Touch is as important as sight. There is a definite feeling of pleasure in contact with certain substances and textures, and the contact of the sex organs is the culminating phase of sexual satisfaction. Hirschfeld<sup>6</sup> has pointed out that the sensations of tactile pleasure in certain areas of the body (erogenous zones) make these areas the most frequent “*breaking points*” of inhibitions and intentions contrary to the uprush of instinctive desires.

Perhaps the sensations associated with smell are the most important,\* although, unfortunately, the functions of the olfactory lobe have been much less studied than those of the visual or auditory centres. It is to be assumed that the perceptive organs of smell receive infinitesimal chemical particles of the odorous objects: thus smell is a specialised tactile sense. The sense of smell exists in all vertebrates from the fishes upwards.

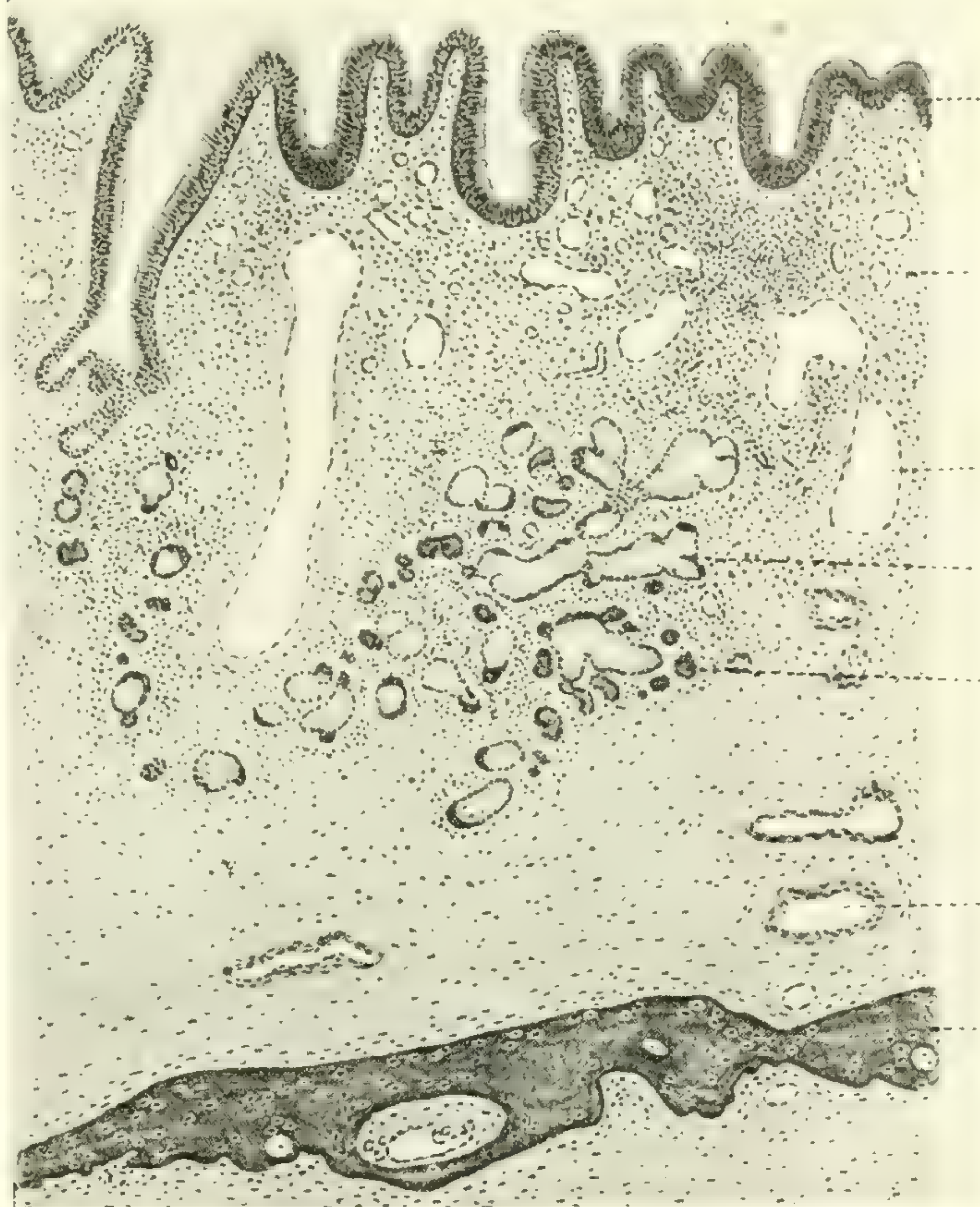


FIG. 109.—Vertical section through the mucous membrane of the inferior nasal concha.

\* Cf. Van de Velde. “Personal qualities or idiosyncrasies are of great significance in the association of sexual emotion with the *sense of smell*. This is the case both in perception of and reaction to olfactory stimuli and as regards the special personal odours. Here there are important *social* variations and both olfactory susceptibility and the range and intensity of personal odours are probably greater in women than in men. Olfactory susceptibility is a very diverse and uncertain factor. There are persons in whom it hardly exists. There are certainly many who have no conception of the sexual significance of odours and who are not conscious of any specific reaction to odours. Inasmuch as they are here anæsthetic and unappreciative, they lose a delectable relish to love. I would advise such persons to give their attention to the subject of odours, to become acutely conscious of the enjoyment they derive from the subtle and various scents exhaled by the body they love.” “*Ideal Marriage*,” p. 26. See also *op. cit.*, pp. 27–39, and Dan McKenzie: “*Aromatics and the Soul*.” London, 1923.



There is a process of chemo-tropism which has been observed even among flies by Loeb : but probably the process here is independent of any sensations on the part of the insect and is a matter of chemical affinity. Many creatures show an unmistakable association of smell and sexual excitement during their rutting or breeding seasons. Birds spread their tails, ruffle their plumage, and secrete odoriferous substances. There is reason to believe that the particular distribution



FIG. 110.—“ Nougi,” or nose greeting of the Maori, New Zealand.

of hair on the human body has an olfactory use ; the skin, sudoriferous and sebaceous glands of head, armpits and genitalia are olfactory zones.

Among devotees of the peculiar sexual manifestation we term *fetichism*, it has been remarked that their favourite objects are those apt to be saturated with human exudations : feet, shoes, stockings, chemises, handkerchiefs and hair.\*

\* *Cf.* The story of Henri III. of France, who was consumed by a fit of passion after having wiped his face with the sweaty shift of Maria of Cleves.



There is a further curious genito-olfactory interaction which has been discovered and recorded by Fliess.<sup>2</sup> There are certain regions in the lower region of the conchæ in the nose, near the tuberculum septi, which strongly resemble the erectile tissues of the genitals. The resemblance is twofold: first, it is structural; in both areas there is a network of minute blood vessels which does not empty itself directly into the venous system but interlaces over a relatively considerable sphere and thus easily becomes congested. These "genital" areas of the nose are innervated from the sphenopalatine ganglion, which is connected with the carotid, through the petrosus profundus—the sympathetic branch of the caroticus internus. And there is not only a structural likeness to the genital tissues but also a certain functional interaction, as has been proved by the frequent and severe attacks of nose-bleeding in the years just before and during puberty and the menopause; and by the dilation and congestion of the nasal passages during menstruation. (Further details on this subject have been given by Hagemann, Schiff, Falta and Seifert, who refer to nearly 300 authorities on this subject.)

Red-haired or auburn women and girls are known to have pronounced personal odours. And prostitutes know that masculine potency may often be stimulated if they bring the nose of their lover into contact with hairy parts or shoulders.

Kissing is a complex contact in which tactile and olfactory sensations are mingled with cerebral associations and also probably with definite flavours, in some cases at least.\* Its pre-human and primitive human evolution are curiously uncertain, but possibly the lover's mouth-to-mouth kiss of the modern West evolved through the "nose-kiss" of primitive peoples and Eastern Asiatic civilisations (Fig. 110).

Titillation also and the activity of the dance tend to excite odoriferous secretions and thus are erotic means of stimulation.

Jäger has pointed out that olfactory impressions are closely interwoven with instinctive antipathies and repulsions as well as attractions. Such effects are not only individual but racial, for there is reason to believe that every race has its peculiar odour, which is imperceptible or pleasing—or at least inoffensive—to its own members, but much the reverse to persons of widely different ethnic type. Teleologically we might consider this as Nature's antidote to possible miscegenation, but, whatever its hypothetical "causes," the facts are indubitable. The black and yellow races are generally repugnant to our European sense of smell; but the yellow races find the white man quite as objectionable. (For further details we refer the student to Gustav Jäger, Zwaardemaker, Scheuer, Havelock Ellis,<sup>2</sup> Adachi, Richard André,<sup>2</sup> G. Klein,<sup>5</sup> E. Schultze, Monin.) Friedländer<sup>2</sup> compares human racial antipathies on this basis to the enmities of different species of ants. And the individual sense of smell may be equally acute and pronounced in its effect on emotional relationships. It is probable that every human being has a peculiar individual odour: most of us are unable to perceive this, but dogs are in no doubt: they identify human beings obviously by their smell. And these particular exudations or effluvia must be perceived very definitely by the nose and brain of the dog, for they adhere to and emanate from the master's person, anything he has often touched or worn, and even the imprint of his shoes on the ground or floor. Even if a man washes his feet in salicylic acid solution a good sporting dog will pick up and follow his scent: the dog will even perceive and follow the scent of a bicyclist. And we can only conclude that there must be an analogous process between human

\* For a full treatment of this subject, see Th. H. Van de Velde, "Ideal Marriage: Its Physiology and Technique" (William Heinemann (Medical Books) Ltd., London, 1928), pp. 151–164.



beings, although, in most cases—at least in modern urban environments—well below the threshold of consciousness. We shall have occasion to revert to this topic again.

However, in mankind, the sexual impulse is highly composite and intricate. Diverse elements contribute to its complex and the direction of desire is not dependent on the senses alone (*cf.* Schiefferdecker). We must now consider the

### (c) Associative Factors

#### (The Impetus and Inhibitions of Desire)

We have seen that the stimuli received by the medulla spinalis may operate further, either through simple reflexes or through cerebral conduction via the white medullary substance to the medulla oblongata. If the stimuli received in any given space of time are mainly and definitely sexual, the whole central nervous system is flooded with hormones from the endocrine glands: that is to say, it is chemically eroticised.

The tracts of the medulla spinalis terminate in the cortex of the cerebellum and are partly crossing and partly non-crossing. Their terminal fibres envelop the cortical cells (Purkinje), so that the cerebellum can be regarded as a kind of receiving station (Fig. 105).

It is thought that the medial region of the cerebellum apparently controls the normal static functions of the body and its two hemispheres co-ordinate bodily movements.

The palæencephalon includes, further, the mesencephalon or mid-brain; the optic tract sweeps round to the mesencephalon. If this portion of the brain is removed through accident or operation there is an extreme slowness of all reflex movements. We must, therefore, assume that every muscular contraction of the bodily periphery, though set in motion by the cerebellum, is inhibited in the—operated or defective—mesencephalon. Under the mesencephalic vault is the so-called *aqueductus Sylvii* (*aqueductus cerebri*), named after the anatomist, Sylvius (1614–1672). The aqueduct (or transformation of the mid-brain cavity) connects the fourth ventricle with the third, and has a layer of grey matter, very rich in fibres and cells, and, apparently, in some way associated with the autonomic system (*e.g.*, heart beat, vasomotor or circulatory stimulation, uterine contractions and erection, etc.).

In the thalamus opticus there is probably the main cell centre of the sensory paths. The interaction and connection of thalamus and cortex (and cortical action alone) enable us to perceive and differentiate size, shape, densities and positions of objects.

In the olfactory lobe the chemical sensations received through the nose are registered. And all these important centres are connected with the cerebrum through fibres of the corona radiata. And they also supply the paths for voluntary or volitional movement (from cerebrum to periphery) through the pyramidal cells.

The *cerebrum* is divided into two hemispheres which are ovoid in shape and separated along their upper surface, which is vaulted or convex, by the longitudinal fissure, a deep narrow groove. Each hemisphere contains in its interior the mass of grey substance, the basal ganglia: the cells of the cortex being known as the *neopallium*. The surface area of the neopallium is crinkled into folds and furrows (*sulci* and *fissuræ*) and intersected by convolutions or gyri. In and around these folds are the sensory areas and their circumferent associative areas, according to



Flechsig. The same authority claims that the associative areas only have very slight neural connection with the palæencephalon but are closely interlaced among themselves. There is no doubt that the cerebral cortex is the centre of all the highest and most elaborate psychic processes. Thus the neopallium is the seat of perceptual activity and learning processes.

The palæencephalon or older brain gives us muscular movement of an involuntary type and sensory impressions, and it is even able to construct fresh relations or sequences between sense and movement: but it cannot register or elaborate associations, those complex memory pictures the constituents of which may be combined and recombined afresh.

All reflex actions and many so-called instincts are localised in the palæencephalon and the forms of animal life in which the palæencephalon alone exists are creatures of reflexes and instincts. But as the cerebral cortex begins to evolve, and as it grows larger in area and more complex in structure, the faculties and potentialities of action, sensation and perception increase also: cognition and apperception, habitual and purposive action and, finally, the intellectual processes which are developed in man. These are supposed to be located mainly in the cortical areas of the frontal cerebral lobes.

#### (d) The Motor Factors

##### (The Release of Impulse)

The nerve channels conducting the stimuli—received and registered by the central nervous system—to its peripheries are both motor and secretory, or muscular and glandular. The nerves of the glands stimulate their special secretions, and release a flow of hormones, by which the whole organism reaches a certain degree of tension, without any assistance or participation of the will. This reflex mechanism cannot be brought about or stopped at will: it can only in the course of time be rendered inoperative so that sexual release becomes inhibited. The reflexes are carried to the terminal organs by the nerve tracts. These cortical reflexes have been produced artificially in the course of experiments by Bechterev and Mislavski—among others. Artificial stimulation of part of the anterior frontal lobe in rabbits, or of the gyrus sigmoidens in bitches, caused repeated contractions of the vagina—an effect increased by stimulation of the thalamus opticus, or the central end of the vagus nerve; whereas if the peripheral end of the vagus be stimulated, the vagina is relaxed.

Psychic stimulation may also produce changes of colour; alternate flushes and pallor; here the cerebrum acts on the nerves of the capillaries. In itself, blushing is due to vaso-motor action and has nothing to do with any inborn sense of right and wrong. It is an expression of excitement.

The decrease or ebb of any intense stimulation is termed its decrement and corresponds in degree to the intensity of the preceding excitement.

In ordinary life we prefer to speak of a reproductive impulse. Such does not exist in the sense of being *conscious*, for reproduction is solely the result of copulation, so that with Hartmann or Wundt one could speak of reproductive instinct. But it would be better to speak of an impulse of copulation or sexual impulse, for this alone is released through sexual excitement. Should pregnancy intervene, reproduction is solely the result of copulation, which itself was derived from the excitement of desire. Moll<sup>1</sup> has analysed the human mating impulse into two components. One is local, *i.e.*, genital, and culminates in orgasm. This he terms the urge to



detumescence. The other component leads to the approach, the contact and the caresses, which are part of normal sexual relationships: Moll terms this process contrectation. Contrectation develops long before functional maturity of the genital

organs and is active in children. It is certainly stronger in many women than the urge to detumescence, and both Theile and Pelikan believe that this impulse for contrectation is hardly diminished in men who have been castrated—if the castration took place after puberty. Mother love is a sublimated and specialised contrectation (Figs. 111 and 112).

Hirschfeld<sup>2</sup> has dealt well with the sexual instinct and the emotion of love in his inaugural address to the First Congress of the World League for Sexual Reform on a scientific basis, in Berlin, 1921. He said:

“(1) Love is a complicated series of reflexes. Its centripetal phase is the erotic image or impressions, conveyed through all the senses, in an intense exhilaration and expansion of consciousness, to the brain. Its central phase is the erotic urge, physically based on nervous tension and vascular congestion, and its centrifugal phase, the erotic expression, which transforms latent into dynamic energy.

“(2) The specific capacity for sexual reactions and the aim towards which the reactions are directed, *i.e.*, the sexual tropism or impulse, have a wide range of variation, in both amount and quality; and they are most intimately interwoven with the whole individuality. As Friedrich Nietzsche remarked: ‘The degree and essential nature of any human being’s sexuality extends into the highest pinnacle of his spirit.’

“(3) This endogenous quality or individual sexual constitution is in

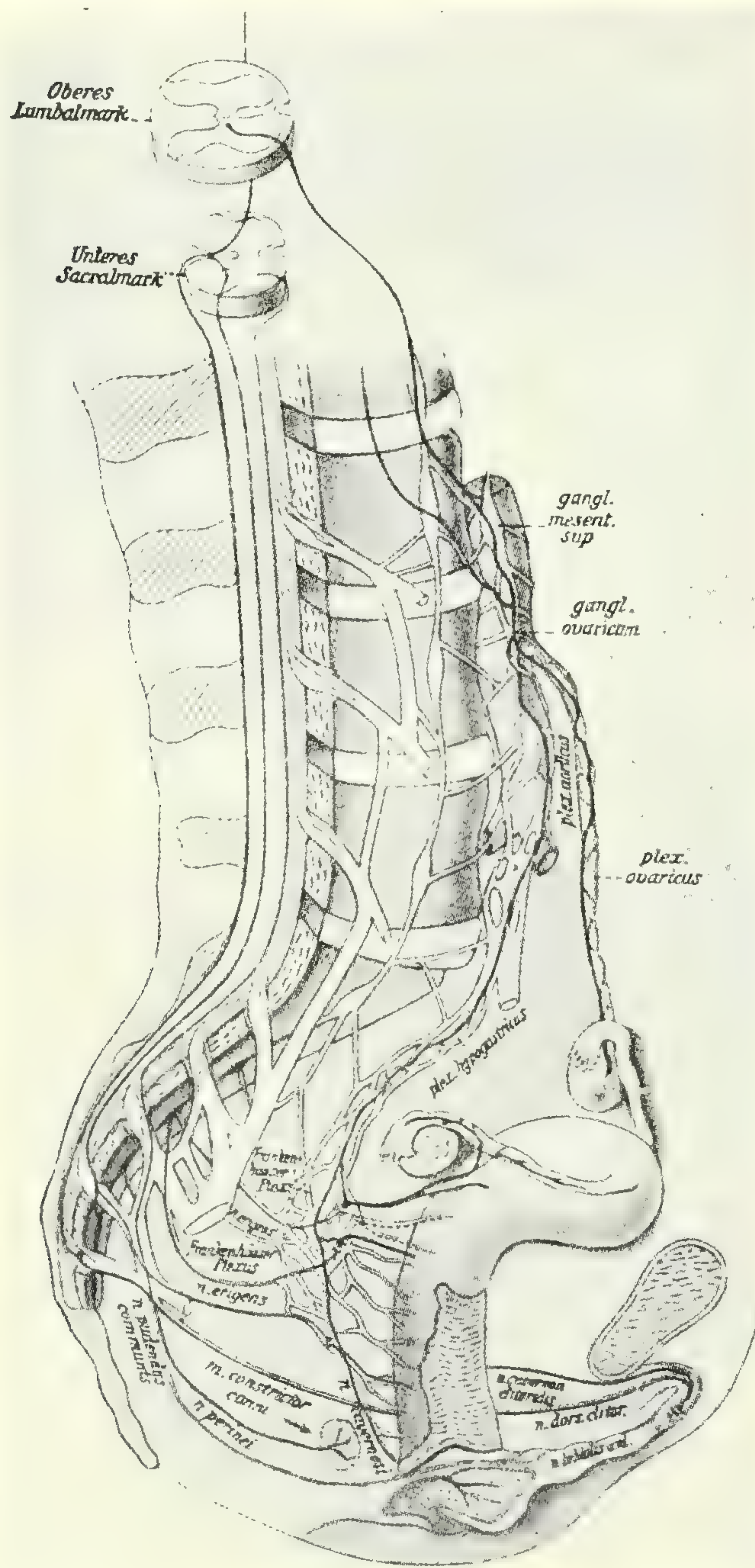


FIG. 111.—Schematic representation of the innervation of the female genitals. (After Dahl.)

the parental germ cells from whose division a living being develops preformed as to inborn qualities. Its special character is mainly dependent on the very variable ‘blends’ of the intrinsically male and the intrinsically female. In all living creatures produced by the conjugation of the two sexes, there are characteristics of both sexes, though to very different degrees. Here the famous axiom of Leibnitz is constantly verified: ‘Tout va par



degrés dans la nature et rien par sauts' (Nature always moves step by step and not in leaps and bounds).

"(4) The need of sexual relaxation or functional activity postulates the saturation of the active centres with the products of the ductless glands, the endocrine secretions influence the brain and the brain stimulates the external secretions. The law of psycho-hormonic parallelism is one of the most important in sexual science. If the gonads are male in character, the masculine characteristics develop; if the gonads are female, feminine characteristics emerge. If there is a blend of male and female glandular structure, the characteristics partake of both

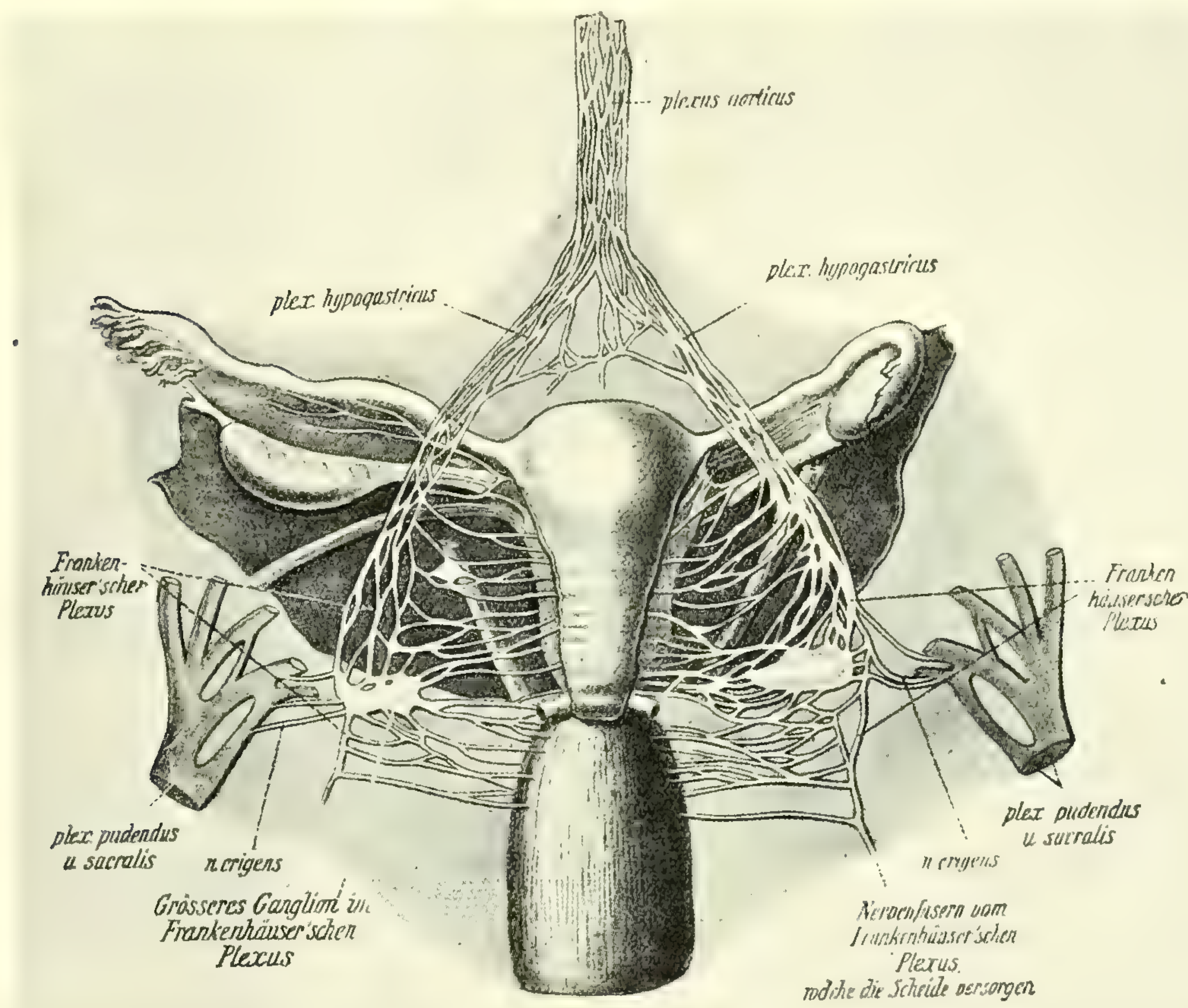


FIG. 112.—Macroscopic view of the hypogastric nerve plexus of the nervus erigens and the cervical ganglion. (After Dahl.)

sexes. If the gonads are mutilated or injured, the sexual characteristics are defective, and if the gonads are wholly lacking, the result is an asexual anomaly.

"(5) The sexual needs of the majority of human beings have just as imperative a demand for occasional fulfilment as the needs for food or sleep. The mind and will may inhibit, excite or consciously repress sexual needs as they do other needs. But such repression is not possible for any length of time without serious bodily and mental results. As in all bodily and mental functions, so here, the best way of living is to avoid either starvation or surfeit and to keep the via media between a necessary minimum (of activity and experience) and a maximum which shall not prove intolerable to the powers and the balance of the personality.

"(6) The significance of sexual love is not limited to its biological result of reproduction. Rather is an adequate sexual fulfilment one of the chief conditions of a good life, both in external efficiency and mental health and poise.

"Love serves and increases life in three ways. Love makes life worth living for the individual for the intense exhilaration and peculiar sensations it is able to bestow. Love unites



diverse beings to one another and forges links between them from which man develops into a higher being. Love causes the individuals to expand beyond themselves.

“ Love is potential life. Life without love is mere existence.

“ In the history of human love, three stages may be differentiated.

“ In the earliest of these, sexuality was mainly a reflex mechanism, as amongst lower creatures.

“ There followed a second stage, in which we now are. In this phase, inhibitive mechanisms became paramount. Humanity has constructed codes of different kinds which find expression in contemporary customs and morals.

“ Thus, in this second phase, we find the most fantastic ethical and practical extremes : compulsory virginity and compulsory prostitution, for instance, and even more extravagant opposites.

“ But for the last few decades, there has been a new light on humanity's horizon, which slowly grows.

“ The third stage in the history of human love must establish harmony between inhibitions and reflexes. It must avoid indiscriminate licence and indiscriminate abstinence ; the abstinence which Edward Carpenter so well called ‘ the renunciation of this world for its shadow.’ ”

## 2. WOMAN'S MENTAL AND PSYCHOLOGICAL GIFTS

The English writer, Allan, put the following question as to the comparative mental powers of woman and man :

“ Is woman intellectually the equal of man ? Are there no natural mental distinctions between the sexes ? Are the obvious differences in thought and action, observable between men and women, produced solely by education, or founded on nature ? Is woman susceptible of the same mental training as man, and could a similar process of instruction remove all mental distinctions between the sexes, and enable woman to compete successfully with man in all kinds of intellectual labour ? ”

Here we touch upon the “ woman question ” which, from the anthropological standpoint, certainly must be answered in a way not quite desirable to the feminists. Ploss appeared to agree with Allan, who gives the following answer :

“ My position is that *there must be radical, natural, permanent distinctions in the mental and moral conformation, corresponding with those in the physical organisation of the sexes.* Examine male and female skeletons ; study men and women physiologically, pathologically, in health and disease ; observe philosophically their respective pursuits, functions, pleasures, tastes, aspirations ; recall the part which each sex has played in history . . . and we shall find it difficult to accede to platform paradoxes—that there is no sex in mind, and that the intellectual diversity of the sexes is due to education alone. . . . A woman with a masculine mind is as anomalous a creature as a woman with a man's breasts, a man's pelvis, a man's muscular leg, or a man's beard.” \*

Every unprejudiced observer must be struck by the fact that everywhere, from earliest infancy onwards, the tendencies, tastes and pleasures of the two sexes are very different. In all nations (see Ploss<sup>4</sup>) the mental difference between the two sexes is shown even in play : boys are more active, like war games, play robbers, soldiers, etc. Achilles, dressed up as a girl, took to the sword. Dolls, toys, dressing up and dancing are girls' games.

The advocates of “ women's rights ” maintain the equality of man and woman ; at least, they say, the two sexes are on the same level intellectually, indeed, one even sees that girls reach mental maturity much sooner than boys and that, *e.g.*,

\* Allan vehemently opposed female suffrage. See Allan.<sup>3</sup>



girls of 16 in their mental development far surpass boys of the same age. From this, a mental inferiority could only be deduced *a posteriori* in the female sex.

But, to this argument, Allan, with full justice, opposes another. That is to say, he points out that the higher the place in nature of a plant or animal, the more slowly does it reach its highest development : it may be also with boys who mature later than girls, physically as well as mentally.

Also, Lorenz von Stein has arrived at a rejection of the emancipation of woman, since, at the end of his observations, he says :

“ So I shall not argue with the physiologists about the weight of the brain ; I shall rather simply state the undoubted fact that all professions are and should be accessible to women with the exception of those in which, when scrupulously fulfilled, the true vocation of woman, marriage, becomes impossible. Now I believe that the limit in the kinds of employment for women has already been reached : the woman who is to stand the whole day long at the desk, at the judge's bench, on the platform, can be very estimable and very useful, but she is no longer woman ; she cannot be a wife, she cannot be a mother.” I agree entirely with van Stein in the dictum : “ In the state of our society emancipation is essentially the negation of marriage.” And, in another passage, the same author says : “ There is no doubt that the vehicle of social thought is man and of social feeling woman.” Nature has assigned a division of labour to be carried out by the two sexes.

The gynæcologist, Runge, writes : “ Emancipation (of women) urges equality of rights for the two sexes and practical participation in these equal rights, and depends on the principle : The woman is of the same value, therefore has equal rights. This is indeed the great mistake that is made : a mistake which is due to complete ignorance of the physiological differences immutably created by nature between the two sexes. The woman is by no means of the same value as the man, for she is of quite different value. No further analysis is needed to show that the result of emancipation would be not only the destruction of marriage but the final result would be an embittered competitive struggle between man and woman with the dissolution of the sexual code made for the protection of woman. And there cannot be the least doubt that this struggle would end in the defeat of the woman, who is so badly equipped for the struggle with the outside world. In the interests of woman, we men must therefore strenuously oppose emancipation.”

Waldeyer,<sup>4</sup> with the support of physiological facts, expresses the desire, “ that in regulations aiming at a change in the education of women, their physical and mental differences from men may carefully be taken into consideration, which is not always done by the advocates of emancipation, and that we study these differences more thoroughly than has been the case hitherto. Nature has certainly not bestowed them merely that women may be pleasing to man and man to woman : she had a further intention : to provide for a *division of labour*. Let us not efface these differences over much ! In all our care for the welfare of woman, let us endeavour in the interests of the state and of the common weal, to protect and preserve also her special characteristics.”

The mistakes which have been made in the modern education of women threaten not merely their physical and moral development, but they also involve grave injury to the welfare of the family and, therefore, to that of society.

“ The vocation of woman,” says v. Krafft-Ebing very rightly, “ is marriage, and in this she is called upon to be a mother, a housewife, a companion to her husband and to bring up her children. Modern education for girls does not take these duties by any means into full account. It does harm to the future work as mother by causing the body to be retarded in its growth by



too much indoor confinement and studying, hastens the time of puberty like a forcing-house and, in the urge to develop the mind, does not even spare the body in its most important pauses in growth. In this way, the present-day general prevalence of chlorosis, the prelude to so many ills such as lung and nerve troubles, is encouraged.

"The ethical and domestic worth of woman as future housewife and companion to man in his often exhausting and laborious path of life suffers from an education which nowadays seeks by personal adornment and ornamental accomplishments to make a girl only a desirable match for a man and thus assure the girl's future—marriage—most practicably. These methods of education neglect the cultivation of mind and heart, the taste for domesticity, simplicity, contentment, for what is high and noble. It is only a hollow sham, it puts value on encyclopædic knowledge and on abilities which make a young lady a favourite in society while leaving the true feminine virtues undeveloped.

"Statisticians assert in all seriousness that about 75 per cent. of marriages nowadays turn out unhappy. Even if this figure is put too high, there can be no doubt that the woman so often stunted in the cultivation of mind and heart, bred for a life of pleasure and luxury, frail in body and failing in health after her first confinement, can be no partner for life for her husband as she should be. Disappointments on both sides are bound to come. The wife is dissatisfied with her position in life. Ailing and nervous, she is incapable of discharging the full range of her duties as wife and mother."

In the preface to A. Friedenthal's "*Das Weib im Leben der Völker*," von Reitzenstein<sup>8</sup> has expressed his opinion in the following lines :

"Nature has created the two differently and this is the root of the different sphere of action of the two sexes. It is a phenomenon of decadence when men like to appear feminine, but it is just as much decadence when a woman wants to appear manly. Only the development of the natural characteristics and their promotion to the highest attainable degree lies in nature's intention and it can be of use for a true advance in the development of mankind. When woman is no longer in a position to develop her own culture to the full and has to take to a poor imitation, then it becomes caricature. . . . It is not the shell but the kernel that has real value ; this kernel, however, is just as unattainable to woman as child-bearing is to man. And in this word lies the eternal, imperishable, Chinese wall for the division of labour of the two sexes. If it is true, as is often maintained, that the political life is always a sorry prerogative of the strong sex, why does woman, whom nature has charged with great duties, persist in stunting the growth of her fine sides with this sorry burden ? Mantegazza says with some justice that woman uses up as much strength in motherhood as would suffice for ten athletes, that in this she lavishes as much virtue for love as is necessary for the development of a genius. Giving life to one human being is so great, so tremendous and demands such an enormous expenditure of strength that, with few exceptions, any æsthetic and individual activity is out of the question. Famous women who have at the same time been happy and loving mothers are little known in history, and almost all, at least up to now, pay for their attempt by having their nerves in a painful state and by chronic neurasthenia or even, worst of all, by lamentable injury to the sentimental side of their life. The world, and Europe before all, has two great questions to solve, the social and the sexual. Men alone will solve the social question and women must solve the sexual : indeed, I do not hesitate to maintain that the social problem cannot be solved at all until the sexual is at least set going. Those women doctrinaires in men's clothing and with homosexual appearance and those political clowns such as England particularly has brought to maturity can certainly not do it ; they are a phenomenon of degeneration ; withered buds which can produce no fruits because, for some reason or other, they have not been able to blossom. Division of labour therefore must exist here also as everywhere in the world and can thrive only in nature's soil. We need a healthy feminist movement which has set up an original feminine ideal of freedom, no imitated phantom ideal. First doors and windows in the giant structure of the sexual life must be opened so that a draught of fresh air may drive out the stuffiness. A free woman along with a free man and each developed according to their own attributes can alone effect true division of labour, and only on proper division of labour can a



sound development be based. For this fact remains authoritative that the woman has to bear the children and must be able to do everything connected with their growth. This is a great piece of work, work of which she cannot be deprived. Rightly conceived, this domain, since domestic activity is attached to it, fills the life of the woman ; each month nature reminds her of it ; no emancipation can obliterate this inconvenient sign. If the woman wants to undertake other occupations, then her productive power is confined to the prevailing one of which inversely she is physically incapable. Hence a section of present-day women are no longer satisfied with themselves or men with them. It is his duty, therefore, to get to know woman as she appears in the life of nations and to help her to find the way to the ideal of feminine freedom. . . . But he who has once achieved a really clear image of woman will award the apple neither to the man-woman nor to the general ascetic conception, but will regard woman as nature has created her, that is, as the absolutely necessary complement of man. He will learn to understand that here two great spheres of civilisation intersect, and that the more differently, and each in its own special kind, the sexes develop the better for human evolution. The greater the difference between man and woman and the more they seem to grow away from each other physically and psychically, the greater will be the interest of both parties and the greater the desire to be mutually complementary. The more woman has to give man and the more man offers her, the more respect and appreciation will each pay. Then only will Kinkel's words be verified :

“ The very best that life can give  
That have I now achieved :  
A noble wife gives me her love,  
Has babes for me conceived.”

These are the pillars of all human existence. If man intends to make them secure, dare woman undermine them ? The absolute decline of civilisation would then result from her work, as Runge showed above. It is significant that feminists always cite more primitive civilisations as evidence for the possibility of their conception of the world, or peoples which are dying out, without reflecting that by so doing they are furnishing the best counter-evidence.

That serious harm to the general welfare of civilised nations results from the ever-increasing claims for educational acquirements for young girls has been seen in Sweden.

The examination of 3000 schoolgirls in the higher classes in Sweden led, as Axel Key reports, to the following result :

“ The weakness in health among school girls, the future mothers of coming generations, has proved very alarming. Altogether, not less than 61 per cent. of them, who all belong to the well-to-do classes, are ill or afflicted with grave chronic ailments ; 36 per cent. suffer from chlorosis, just as many from habitual headache. In at least 10 per cent. spinal curvature, etc., is present, etc.”

Also v. Krafft-Ebing, in a startling passage, sets forth the great dangers which will be caused to the female nervous system by even a small degree of emancipation :

“ The great majority of the women taking part in this campaign run the risk of succumbing in it. The number of dead and defeated is enormous. Women civil servants, especially book-keepers, telegraphists, clerks, post-office clerks, very frequently suffer from serious forms of nerve disease and nervous debility. This is particularly true of candidates for the teaching profession. The requirements from the modern schoolmistress in our strained cultural conditions are unusually high. These poor creatures, who have scarcely outgrown their childhood and are in the midst of the period of physical development, have to strain their minds and to master in a very short time as much learning as a young man who intends to be a teacher but who hardly turns his attention towards studying for his profession before he is eighteen. The mental overstrain which evening study demands is accompanied by harmful effects on the delicate, scarcely fully-developed body in the form of anæmia and nervous debility. Not



uncommonly it happens that these young mistresses break down exhausted immediately after they have passed their final examinations and become a prey to serious nerve troubles."

The frequent assertion that there is no question of innate differences in the mental capacity of the two sexes, but that apparent differences must be regarded solely and only as a result of the different kind of education and of the different methods of instruction for the two sexes, Delaunay opposed with clear and convincing evidence :

"It might be thought that instruction given to both sexes at the same time has the effect of restoring equality between them. No such thing. On the contrary, the working of the brain increases man's pre-eminence over women. In mixed schools where the two sexes receive the same education up to 15, the teachers observe that from 12 years of age, the girls can no longer keep up with the boys. This demonstrates that the equality of the sexes dreamt of by certain philosophers is not near coming to pass. On the contrary, this equality which existed in the primitive races tends to disappear with the advance of civilisation."

The anthropologist, Carl Vogt,<sup>1</sup> has given a hard judgment, but, from such a pen, not a judgment to be underestimated, as to the capabilities of the women students in Switzerland who, as is well known, are particularly numerous there :

"At lectures, the women students are models of attention and industry ; perhaps they even apply themselves too much to carrying home in black and white what they have heard. They generally occupy the front seats because they enter their names very early and then because they arrive early, well before the beginning of the lectures. Only this fact is noticeable, that often they merely give a superficial glance at the preparations which the professor passes round ; sometimes they even pass them to their neighbours without even looking at them ; a longer examination would hinder their taking notes.

"At the examinations, the conduct of the women students is the same as during the lectures. They are better prepared than the young men : to use a student's expression, they are tremendously crammed ; they have good memories so that they can give perfect answers to the questions put to them. But, generally, they stop there. An indirect question makes them lose the thread. As soon as the examiner appeals to individual thought, the examination is finished. They have no more answers. The examiner tries to make the meaning of the question clearer ; he lets out a word referring perhaps to a part of the woman student's manuscript : off they go at once as if an electric button had been pressed. If the examinations consisted solely of written or oral answers on the subjects dealt with in the lectures or which could be found in the text-books, the woman would always get brilliant results. But alas ! there are besides practical tests in which the candidate is face to face with reality and cannot pass with success without having done practical work in the laboratories—and here is where the shoe pinches.

"What makes laboratory work particularly difficult for women—it will be difficult to believe—is the fact that they are often clumsy, unskilful with their hands. The laboratory assistants are unanimous in their complaints ; they are bombarded with questions about the smallest things, and one woman alone gives them more trouble than three male students. It might be thought that the very delicate fingers of these young women lend themselves especially to microscopic work, to handling the thin sheets of glass, to cutting fine specimens, to mixing nice little preparations ; the truth is quite the contrary. One can tell the place of a woman student at a glance by the *débris* of glass, by the stains from spilt reactives and colouring matters, by broken instruments, by notched knives, by spoilt preparations. There are no doubt exceptions, but they are rare."

The woman student, according to Vogt, is "supérieure pour l'emménagement des choses apprises, et inférieure au contraire en tout ce qui concerne l'activité pratique et le raisonnement individuel."



That was written several decades ago and refers to Switzerland. The experience which we have in Germany with women's study is still insufficient to admit of a judgment being formed.

In the opinion of a lady (Ida Klug, at the women's celebration of the centenary of Heinrich Pestalozzi's birth) :

"It has been maintained that women are in general just as capable of following the pursuits which really fall to men's share if they were only trained for them in the same way. They could, for example, reach the summit of artistic achievement, they could instruct their daughters in the sciences quite as well as men or even better, and so on. Yet this, in my opinion, must be denied. Women, unless we can regard as the rule one exception in thousands, are just as little capable of reaching a development of the intellectual powers as high as that of the male mind, as men are of attaining the same degree of self-sacrificing, self-denying love as women. In women, the spiritual life, the power of love dominates and, because of this, a finer feeling for the beautiful, the true and the good ; in the male mind, however, the power of the intellect with which he grasps and masters everything dominates. Therefore, woman cannot penetrate into the realms of science and art with the acuteness and assurance of the male mind. She attains only a certain height where she encounters the impassable snow line while man is able to ascend the giant peaks of cold, inflexible inquiry. Therefore, if we demand a deeper, more intellectual education of women, this must take place only with respect to their real vocation, and here they can, of course, be allowed to have a say in the matter."

Regarding art among primitive peoples, Richard Andrée <sup>2</sup> points out a remarkable circumstance which though not applicable to all tribes, yet appears to be undoubtedly right for the majority. He says :

"Almost everywhere, it is the men who are occupied with the production of these drawings ; in this, the female sex takes a back place. Must it not arise from some general psychic law which is the same for the most different races ? There is no apparent reason why women should not occupy themselves with drawings just as well as men. This leads, in some circumstances, to peculiar phenomena. The aptitude of the Papuans for very varied and beautiful ornamentation is well known ; all wooden implements and weapons have the most varied decorations in carving, but the pottery (in Kaiser Wilhelm's Land) which otherwise really tempt ornamentation, as has been shown by the oldest prehistoric examples known in Europe, is without any decoration and, for this reason, there the making of pottery, as a writer remarked, 'est exclusivement confiée aux soins des femmes, dont la nature est généralement peu artistique' " (Miklucho-Maclay in *Bull. soc. d'anthrop.*, 1878, 530.)

Putting the two sexes on an equal footing, as Virchow <sup>1</sup> says with justice, should not be attempted on intellectual and physical grounds, for all the differences ordained in the two sexes must remain. Complete emancipation would lead to the dissolution of the family and to children being brought up by the State, a condition which is to be found at the lowest stages of human civilisation.

### 3. THE PHILOSOPHY OF THE EARLY NINETEENTH CENTURY IN ITS CONCEPTION OF THE CHARACTER OF WOMAN

If equality of position of the two sexes is prohibited by the specific physiological functions, in particular those of conception, pregnancy, birth, childbed, suckling, and the rearing of children, with which the female sex had been endowed by nature, then also the psychological difference between man and woman emerges very clearly. For the whole mental life of woman follows specific lines of growth, and though no mental faculty which man possesses is completely absent in woman, yet, partly



owing to natural tendency, partly to the physiological course of her life, certain faculties are more developed in woman, others less.

That the periodically recurring influences which, owing to the multiform functions of propagation, engross woman, also affect her spiritual life during the performance of these functions goes without saying. Thus we know that the female sex is far more susceptible to a great many nervous ailments than the male, that is to say, that the nervous system of woman undoubtedly displays a specific action. Nervous debility, this anomaly, so widespread in our time and with our civilisation, is, no doubt, shared equally by both sexes, and it is certainly wrong to maintain that woman is more inclined to nervous debility than man (Moebius). The fact is rather that woman is especially liable to hyperesthesia and its attendant forms of disease, and that in particular the so-called hysterical states occur mostly among women, while hypochondria appears as a disease of men; the peculiar states of weakness and exhaustion which are called neurasthenia have been observed much more frequently among men than among women.

"Woman," says Moebius, "maintains in general a passive attitude. The life of feeling predominates in her: the intellect, though perhaps at the outset is equal to that of man, is little developed, in particular the faculty for abstract ideas, reason, is checked. We can find a tendency to nerve troubles in so far as weakness of will is characteristic of them."

All those periods which appear as phases of development of the female sex give rise more or less to nervous affections: the beginning of menstruation, pregnancy, childbed, the change of life or climacteric, especially in our civilised conditions of life, bring in their train the most varied disturbances in the realm of the nervous system, whilst the women of savage peoples apparently are much less liable to these nervous affections as well as to the many diseases of the genitals. We shall revert to this in the next section.

The lesser degree of strength which the female sex shows in comparison with the male is, as Lotze<sup>1</sup> says, balanced by a greater degree of adaptability in the most diverse conditions. Lotze therefore cites the old and just observation that women adapt themselves far more easily in new conditions, in an unaccustomed position and change of fortune, whilst man has difficulty in effacing traces of his early upbringing. He also refers to the mixture of sanguine vivacity and sentimental warmheartedness which we either find in women or the lack of which we lament as an individual imperfection.

"There can hardly be anything which a woman's intellect could not grasp but a great deal in which women never take an interest. Though it is commonly said that man's understanding seeks the general and woman's the particular, yet, in numerous cases, the woman's power of particularising will be found the less; moreover that apportionment of the business of the understanding would not accord with the egoistic efforts assigned to the male will, and with the subordination to the general assigned to woman's self limitation."

At the conclusion of his outline, Lotze says:

"Finally, I might venture to assert that to the female mind, truth has quite a different meaning than to the male mind. To women, everything is true which is justified by the rational significance with which it adapts itself to the whole of the rest of the world and its conditions: it is of less consequence whether it is at the same time real. They are therefore inclined not, to be sure, to lying, but to pretence: and it does not matter to them whether anything which has become valued by them contributes to the desired pretence—also followed up in another respect would reject a thing which is just what it appears to be. To want to seem something



without being it is, to be sure, a common human failing, but man usually wants solidity and reality at least in what he possesses : women, on the other hand, have a considerable predilection for a surrogate. With these tendencies they are not liable to scientific study and their ideas are artistic and intuitive. Just as the poet does not create characters by analysis and calculation, but tests their reality by being able to live in their way in his mind without the feeling of artistic self-misrepresentation, so woman's imagination likes to get right into things, and as soon as she gets an idea of how what is there moves and evolves, she thinks she has a full understanding of it. That the very possibility of all this being so contains a scientific problem is very difficult to make women understand. It is easy to see how the great custodians of life like the security of religious faith, and the peace of the moral sense is connected with this ; but also in little, insignificant traits one finds this predominance of natural judgment over scientific analysis. Women employ thousands of neat technical manipulations in their daily work, but they do not know how to describe what they do skilfully, they can only show it. Analytical reflection is so little natural to them that it may be asserted without risk of being far wrong that words like to the right, to the left, across, ' whip-stitch ' do not signify any mathematical relationships in women's speech, but certain peculiar feelings which one has in following these indications while working."

Many philosophers, in particular Schopenhauer and v. Hartmann, as is well known, assign to the female sex a position which must be designated as subordinate. Some characteristic passages from their works (characteristic also of the authors) must not be passed over, for they proceed from undoubtedly intelligent men, and are a further proof of the fact that it only depends on the point of view from which woman is regarded. Schopenhauer says :

" One need only look at a woman's shape to discover that she is not intended for either too much mental or too much physical work. She pays the debt of life not by what she does but by what she suffers—by the pains of childbirth, care for the child, by subjection to man, to whom she should be a patient and cheerful companion. The greatest sorrows and joys or great feats of strength are not assigned to her ; her life should follow more quietly, more gently and less obtrusively than man's without her being essentially happier or unhappier. Women are directly adapted to act as the nurses and educators of our early childhood for the simple reason that they themselves are childish, foolish and short-sighted ; in a word, are big children all their lives, something intermediate between the child and the man who is an adult in the strict sense of the word. Consider how a young girl will toy day after day with a child, dance with it and sing with it and then consider what a man, with the best intentions in the world, could do in her place.

" For girls, nature has in view what is called, in a dramatic sense, a sensation, for she endows them for a few years with a wealth of beauty and a fullness of charm at the expense of the rest of their lives ; so that they may during these years ensnare the fantasy of a man to such a degree as to make him rush into taking honourable care of them in some form or other for a lifetime, a step which would not seem sufficiently justified if he only considered the matter with cold reason. Accordingly, nature has furnished woman, as she has the rest of her creatures, with the weapons and implements necessary for the protection of her existence and for just the length of time that they will be of service to her, so that nature has proceeded here with her usual economy. Just as the female ant, after coitus, loses her wings which then become superfluous, nay, dangerous for breeding purposes, so, for the most part, does a woman lose her beauty after giving birth to one or two children, and probably for the same reason." Here Schopenhauer attempts to interpret beauty from the teleological standpoint.

In the earlier maturity of woman, too, Schopenhauer discovers a sign of inferiority, for he argues as follows : " The nobler and more perfect a thing is, the later and slower is it in reaching maturity. Man reaches the maturity of his reasoning and mental faculties scarcely before he is 28, woman when she is 18, but hers is reason of very narrow limitations. This is why women remain children all their lives ; see only what is near at hand, cling to the present, take the appearance of a thing for reality and prefer trifling matters to the most important."



On the other hand, Schopenhauer admits: "To consult women in matters of difficulty as the Germans used to do in olden times is by no means a matter to be overlooked, for their way of grasping a thing is quite different from ours, chiefly because they like the shortest way to the point and usually keep their attention fixed upon what lies nearest, while we, as a rule, see beyond it just because it lies under our nose. It then becomes necessary for us to be brought back to the thing in order to obtain a near and simple view. This is why women are more sober in their judgment than we and why they see nothing more in things than is really there; while we, if our passions are roused, are prone to exaggerate or add from our imagination. It is because woman's reasoning powers are weaker that they show more sympathy for the unfortunate than men and consequently take a kindlier interest in them. On the other hand, women are inferior to men in matters of justice, honesty and conscientiousness.

"Because women really exist only for the propagation of the race and their destiny ends there, they live more for the species than for the individual, and in their hearts take the affairs of the species more seriously than those of the individual. This gives to their whole being and character a certain frivolity and altogether a certain tendency which is fundamentally different from that of man, and it is this which gives rise to that discord in married life which is so prevalent and almost the normal state."

Here we add a passage from E. v. Hartmann<sup>2</sup>:

"Woman's morality, especially that of the most womanly woman, is very often of this kind, and that is the main reason why the female sex, on the whole, attains that maturity of the moral character in which autonomy first comes into its full power with so much more difficulty than the male. The majority of women remain in a state of moral infancy all their lives and, therefore, right to the end, they need the guardianship of heteronomous authorities; they themselves generally really feel this need and the more incapable they are of yielding to the authority of a mere abstraction like the modern state, the more their pride rebels against looking to husband or natural protector for guidance in their actions, the more fearfully do they cling to the heteronomous authorities of religion and morality, the more ceaselessly do they drift like a rudderless craft on the ocean of life if these two anchors also are torn from them. This fact may in the sense of autonomous morality be found very disturbing, but in the interests of truth and of practical life it must be recognised as a fact; measures must be taken accordingly and care must be taken lest its importance be minimised in a misunderstanding of the interests of the female sex. If truthfulness and a sense of order are characteristics in which education can do proportionately more than in others, if in particular the sense of order can be replaced to some extent by the æsthetic sense for harmony, yet lawfulness and justice are the two characteristics which of all hitherto observed moral motives appear weakest in the female sex on the average. The female sex is the unfair and unjust sex, and nobody can be deceived as to this fact, which, of course, admits of very considerable exceptions, but one who confounds outward legality and the observance of conventional forms with the existence of the corresponding inner sense."

#### 4. NORMAL AND MORBID BASES OF PSYCHOLOGICAL DEVELOPMENT

If we are to arrive at a just estimate of the normal as well as the morbid sexual impulse, we must begin with the child. It is not generally easy in the case of the child—at least in its early life—to recognise the manifestations of the sexual impulse, and yet there can be no doubt that it is there. Many see in the corresponding actions the result of imitative impulse. Many admit pleasurable sensations without defining with which impulse they are to be connected, although they observe that the child seeks out the causes of the pleasurable sensations more or less ardently. Here Freud and his school undoubtedly deserve credit for having done the preliminary work.



### (a) Infantile Sexuality

In this two stages may be observed. The polymorphous, lasting till between four and five years of age in most cases, and the first educative or period of repression.

We know that sexual sensations exist and even emotion may be active long before sexual maturity or aptitude to reproduce. Endocrine secretions begin in the body of the unborn infant or foetus. And, in early childhood, many cases are recorded of children who touched and rubbed their genital organs until they gave unmistakable signs of acute excitement and relief in a manner resembling adult or adolescent masturbation. Sadger,<sup>1</sup> Hirschsprung, Fleischmann, Kassowitz, Neter, Heubner and Friedjung have documented and described such cases as early as nine days after birth. Apparently, the erogenous zones of later life are already sources of voluptuous pleasure at a year old, or less, *i.e.*, from birth, potentially at least. And there are not the sensations of disgust and shame which develop later. Therefore Freud terms this phase "polymorphous-perverse," and Sadger<sup>1</sup> maintains that the child's innocence and purity, *i.e.*, its lack of interest and feeling in sexual matters is a myth, to which the facts have never corresponded.

The people who are shocked at this may well bear in mind that a child with no sexual vitality has probably very little vitality at all. Mental development runs parallel with sexual development. If we want to have thriving intelligent children we must not expect them to be deaf and blind in this respect alone.

K. Th. Preuss has spoken of the magic of bodily orifices, and has emphasised the attention these parts receive from many primitive peoples as, for example, in the records and monuments of ancient Mexico.

These specimens of archaic art and ritual may be at least partly attributed to a special infantile "official eroticism," which has survived puberty and adolescence. As a general rule, all bodily apertures are erogenous. The mouth is specially so. The act of suction is an innate instinctive reflex, and this reflex is not confined to the act of lactation but extends to other portions of the body, whether that of the sucker or of other persons. And there may result not only a pleasant sensation but a distinct sexual relief. Lindner points out that children often rub their erogenous zones, as well as attempting suction. Galant has given an account of a young woman who retained these habits in later life and expressed herself as follows: "The pleasure of sucking during childhood is the same as the sexual voluptas of the adult." The anus has also a certain power of voluptuous sensation. Bleuler and others have given instances of this in children. And there is not only an anal but also a urethral pleasure-complex in children; it has been maintained that there is no such sensation as disgust in the human young before their fourth or fifth year. Sadger<sup>2</sup> has collected much relevant material on this, and also we must remember that ears and nose may be, and in children often are, areas of pleasurable exploration.

Coprophilia. Freud pointed out that in children interest in sex could not, in its first manifestations, be distinguished from interest in excrement. The structure of the human pelvis has placed the rectal passage and the genital passage (or, in man, the genito-urinary passage) in close proximity to one another and the association of the two functions has been established even where consciousness does not link them together.

There is also a skin or dermal eroticism. Sadger<sup>3</sup> has dealt with it in detail. Tickling and contact, however light, with the inner surfaces of the thighs will often produce erections and uncontrollable fits of laughter in children.



Muscular eroticism is connected with the development of muscular power and co-ordination, and the exercise of power over others, especially by provoking movement either of flight or defence, is very marked in children. It may manifest itself as definite cruelty to animals or bullying of smaller and younger children. Some physiologists believe in a specialised muscular sense, a faculty which enables us to apprehend the absolute and relative positions of our bodily parts, and the weight and density of external objects. Basler considers that the muscular sense is based on the stimulation of those centripetal nerves which are situated in the muscles, and equally on the sensibility of bones, fasciæ and sinews, and that it surpasses the sense of pressure in delicacy of perception.

There is also a pleasurable-toned compulsion to sniff and inhale the smell of hair, skin, and even sex organs, in children. This is not necessarily "corrupt," but often naïf and spontaneous.

There is a highly significant impulse to expose and display the body, especially to specially beloved or favoured persons, and not only to display but to behold. It is probably correct to speak of infantile exhibitionism as general in early childhood. Children, before five years, are inclined to watch one another in the performance of excretion and micturition and the games of "father and mother" and "doctor" are certainly spontaneous rather than imitative.

Freiherr von Reitzenstein made a curious observation on a boy of five years old, whose whole education was normal and practical, and whose impulses were certainly not degenerate. This child was in the habit of drawing rough outlines of "people"; and he always made a straight dividing line between the thighs. He was asked "what sort of people?" and replied invariably "a girl." He was asked to draw a boy, but made no attempt to indicate any sex organ. It was considered unwise to ask him why he drew a genital organ for the girl but none for the boy; but it may be confidently assumed that he was only interested in depicting the sex organ of the girl, no pleasure being obtained by drawing his own.

In the earliest stages of infantile sexuality children do not conceal their instinctive interests and habits even from adults. There follows a period or phase of repression, through deliberate education by adults, and, in this phase, the child is only "natural" and not on its guard among other children, especially about its own age.

Freud has pointed out the traditional and usual sequence of repressions in the second phase of infantile sexuality. First of all the interest in urine and excrement (coprophilia) is rebuked, and the concept of disgust and "nastiness" is developed or imposed. Unfortunately, this repression and reprobation of the excretory functions extend, both with structure and association, and more or less definitely to the sphere of sex. Sex and dirt, sex and disgust become identified. The same repressive process extends to all the other polymorphous sexual interests and they are penalised; thus dread and fear of punishment and painful consequences are attached to them. Disgust and anxiety combine to form the sensation of shame and the emotion of modesty, and these powerful complexes, though not innate, are re-enforced by the atavistic urge of self-defence or self-protection, especially in woman. This urge is pronounced in animals and helps to accumulate and increase voluptuous sensation, and is thus a powerful engine of natural and sexual selection, as Havelock Ellis has remarked. Only prolonged, intensive and, to some extent, skilful wooing by the male can overcome this mixture of fear, repugnance and self-preservation. Thus the strongest and most ardent males have the greatest opportunities of begetting future generations—in primitive communities. The most



pronounced form of sexual self-defence in civilised communities is coquetry. Coquetry does not necessarily aim at denying, but wishes to prolong the pleasant sensation of being wooed, thus sharpening the desires of the lover. But as sensations of guilt, disgust and dread are also strongly associated with sex, hypocrisy arises. Modesty develops a wide register of tones and semitones and expresses vasomotor processes through blushing and pallor. But blushing is the sign and product of a certain degree of congestion and excitement, and has nothing intrinsically to do with any objective external canon of right or wrong. It depends on the response which the excited or amorous person expects from his or her environment ; in the dark or in security and seclusion, they hardly play any part (*cf.* Havelock Ellis and Giessler). But all these repressions of natural urges and their associated complexes are of the first importance in determining character and outlook of the growing child.

[Psycho-analytic investigation into the sexual life of civilised children has been much intensified of late years through the development of the so-called "play technique" devised by certain continental workers and adopted by English and American analysts (*cf.* M. Klein, "Symposium on Child Analysis"). A survey of the literature of the early years of the twentieth century was given by Pastor Pfister in his book on love in children, and since that date development has been rapid.

Without appraising the evidence put forward by psycho-analysts for their somewhat startling theories and methods it may be said that the present tendency seems to be towards more importance being attached to the factors of disappointment and frustration than was formerly the case. The works of Sigmund and Anna Freud, Hug-Hellmuth, M. Klein, etc., will be found useful in studying modern methods in child analysis, and the results which are claimed to be achieved thereby.

In girls a potent source of future troubles is said to lie in a so-called "penis envy" which they cherish and which is connected with an alleged castration complex. It is urged that the Œdipus tendencies of the growing girl are ushered in by oral desires for the father's phallus. She desires to deprive her mother of the possession of her father's penis, and thus gain it for herself. Freud himself was of the opinion that what makes the girl turn from her mother is the fact that she considers her responsible for her own lack of a penis. Small girls are said by psycho-analysts to cherish phantasies about "the enormous powers and huge size and strength" of their father's organs, which ideas rise from their own "oral-, urethral- and anal-sadistic impulses" (Klein).

Whatever may be the truth (or otherwise) of Mrs. Klein's original and stimulating observations, her views do not find acceptance in certain quarters, since Anna Freud has developed a technique differing from that favoured by Mrs. Klein in important particulars. Both methods are, however, said to yield the most excellent results.]

### (b) The Period of Puberty

#### (Phase of Fixation)

At puberty the inchoate polymorphous sexual impulse is definitely "orientated" or directed towards a preferential type of object or response ; the previously acquired repressions still continuing to modify the direction and quality of desire in many ways. And the activities of the endocrine glands give the personality its distinctive sexual idiosyncrasy or blend of male and female. There are two groups ; those functionally "normal," *i.e.*, tending to processes helping reproduction, or those



functionally "abnormal," *i.e.*, tending to processes where reproduction is not possible. If the emotional trend in sex is quite definitely determined and limited in one direction, we speak of its fixation, and this may be either (biologically) normal or abnormal. This is based mainly on the structure and secretions of the endocrine glands, and can be either exclusively heterosexual, *i.e.*, on members of the opposite sex, or homosexual, *i.e.*, on members of the same sex. And it must be clearly understood that between the extremely virile man and the extremely feminine woman there are a whole series of less specialised types of physique and temperament, which Hirschfeld has termed Sexual Intermediate types. And there is no doubt that the differences of physique and faculty are accompanied by various definite differences in their specifically sexual tastes and inclinations. We shall presently enumerate the main categories. But there is one group which deserves special mention, for in their case environmental influences are often decisive. In these persons there is an endocrine basis which would and does indicate in the main a certain definite emotional trend (or mental attitude) which is, however, occasionally deflected somewhat towards other objects of desire or methods of satisfaction. The causal mechanism here is somewhat complicated, but during the polymorphous phase of early childhood all possible "perverse" inclinations were present and we may assume that any of them might have become the dominant fixation. A humane, enlightened, happy and wholesome early environment and education would have left the real endocrine idiosyncrasy sublimated but not stifled, to "play lead." But such education and early environment are all too rare. Sheer neglect or traditional moralism give no direction and cultivation of the emotions and/or simply repress any sort of sexual impulse. There follows, especially during the tumultuous mental growth and stress of puberty, a repression which leaves the emotions at the mercy of active extraneous stimuli. And these stimuli are wholly a matter of chance. In institutions and schools, during the years between 11 and 18, a whole sequence of abnormal influences may be brought to bear on the immature personality and may completely change the disposition. But there may be some degree of endocrine anomaly if the acquired habits of puberty take hold of adult life.

Actual bisexuality excludes definite fixation. Bisexual persons are those in whom homosexual and heterosexual inclinations are almost evenly poised; who may be strongly attracted both to men and women. Thus we may distinguish three main groups of positive sexuality alone. A pronounced biologically normal trend which expresses itself in heterosexual desire; a pronounced abnormal trend which must lead to homosexual desire; and a pathologically unstable trend which may lead to both heterosexual and homosexual desires under the influence of early repressions and environmental conditions, which may influence the normal endocrine factors and activate the abnormal.

The repressive processes of puberty are specially important in persons of neuropathic constitution. And puberty is the period of sexual crises; the period of being "misunderstood"; of storms and stress; of extravagant ideals and vague dreams; of maladaptation to realities whether of environment or other individuals; of extreme irritability, moroseness, exhaustibility, alternate excitement and depression, agonies of shyness and painful aggressiveness. And there may be a whole series of physical neuroses, St. Vitus Dance with painful grimaces; stammering, nail-biting, epileptoid phenomena, obsessions—running away from home or school, arson (pyromania), and others of the same kind. There is also a highly pitched idealism, often without habits of practical consideration and kindness to others



and without real experience of the world. All these manifestations have become acute since the war of 1914–1918. These years have unleashed the tendency to extremes which exists in puberty; often there is criminality, violence, robbery, murder, assaults, “love pacts,” drunkenness, blackmail; and all these are not prevented by the acute conflict between traditional religion—with its emphasis on authority and salvation—and the stress of the accumulating sexual urge. Puberty may be a time of religious “conversion,” of exquisite romantic devotion, of enthusiasm and idealism. It may also produce criminals, hooligans, prostitutes and procurers.

The repressive influences of education and environment are, in part, necessary for human order and achievement, but, in part, highly dangerous to efficiency, sanity and happiness; especially when repression is enforced regardless of the special constitution and temperament of the young creature, and when it is based on the moral codes of traditional religions.

Early educative and environmental impressions, however undesirable, may be obliterated in the course of vigorous physical and mental growth, especially after normal and to some degree satisfactory sexual activity has begun. But, in persons of neurotic or neuropathic constitution, the mistakes of their parents may persist throughout life in morbid deviations of various kinds. Young persons at puberty try automatically and unconsciously to discover objects for their intense organic and psychic unrest: these we may term “sexual equivalents.” These are of the most diverse kinds: sentimental—but often highly emotional—attachments to teachers, fellow-pupils or casual strangers; many games and sports, dancing—often the only conventionally conceded form of relief for young girls—“moonlight and April” verse, music; or erotic books and illustrations, together with masturbation, but not the kind of self-relief of the adult. If these safety valves—or those provided by certain individual hobbies and interests—are closed, the results may be serious neuroses and, if the threat and terror of religious superstitions be added to a situation already difficult enough, there may be life-long mental injury.

Girls have the automatic relief of recurrent menstruation; but there is no doubt that the monthly period is a time of mental unrest, and neuroses may then develop very easily. These considerations assist in explaining certain criminal traits in women, the development of their character on the one hand and marked development of the sexual impulse on the other.

### (c) Normal Bases of the Sexual Impulse

The normal functioning of the sexual impulse is on the lines which make reproduction possible.

Normal adult sexual desire is therefore heterosexual, *i.e.*, directed towards the opposite sex, and is neither below a certain degree of urgency nor uncontrollably strong.

Therefore, on the basis of biological and neurological facts, we suggest the following definition of love.

Love between the sexes (or in abnormal cases, between persons of the same sex) is a relationship founded on or aiming at sexual acts and processes. It is activated by *special stimuli* which decide its direction; and limited by the chemical function of the endocrine glands, expressed through the associative processes of the cerebral cortex: it is a state of intense excitement and, therefore, not static or permanent. Certain harmonies of sentiment and habit may transmit it; and passionate love may merge into a lasting emotion of which there are many other component parts.



To-day the term love is often used in a false sense. Here the definition will be limited to that outlined above. A platonic love, which has no sexual interests or elements does not exist; such an emotion is friendship, sympathy, affinity, comradeship, but not love.

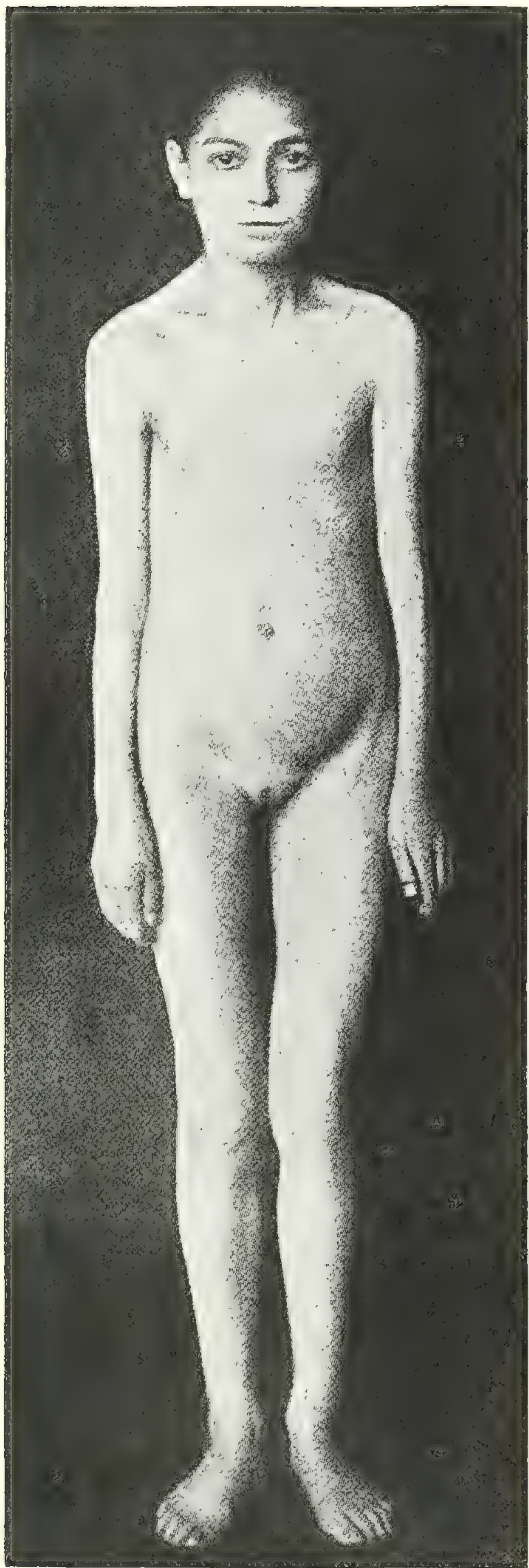


FIG. 113.—Infantilism in a 13-year-old girl. (After Meige.)

As love depends upon external stimuli there must be some special feature, some conspicuous and appealing charm which focuses attention and commences the whole cerebral associative process; this special feature, attribute, or quality has peculiar power and often decides the duration of the erotic spell. In other words, almost every human love has a strong fetichist or symbolist basis, and, indeed, sexual love is largely fetichism. Nevertheless, certain degrees of fetichism are both biologically and emotionally abnormal; as when sexual excitement *and* sexual satisfaction are provoked by an inanimate object (shoes or gloves) or by a part of the human person (feet, hair) without any reference to the organic unit of the whole. Love has also strong exhibitionist elements. To display oneself to the beloved being is a deep human urge, but it becomes abnormal if exposure alone is sought and is sufficient to provoke the climax of sensation and relief.

Even the most emotionally normal and balanced human beings will have recourse to some kind of sexual equivalents or substitute gratifications, under prolonged and complete deprivation of normal satisfaction. Many become masturbators by necessity (*e.g.*, in prisons or cloisters); others may develop artificial homosexual habits (in barracks or in ships); or dances, theatrical performances and fugitive contacts may provide for girls a certain kind of relief. But such relief is delusory, and if the normal deprivation is prolonged it leads to the sexual neuroses. Freud has rightly said, "Neuroses are impossible in normal sexual life."

#### (d) Pathological Traits

We cannot deal with this subject in detail, but as it is immensely important and still somewhat obscure, we must refer to its main factors here. Abnormal sexual desire, like normal sexual desire, has two main facets and forces: psychic and harmonic. Harmonic anomalies may be quantitative, *i.e.*, they may manifest as defect or as excess; and these may be shown either in the physical or emotional spheres. The specific genital glands or gonads may be lacking (Eunuchoidism, *cf.* Saenger) or of arrested



development (Infantilism\*). These manifestations are probably due to disturbances of the hypophysis or pituitary gland. Or the quantitative endocrine anomaly may show itself as uncommonly slight and weak (hypo-erotism) or as overwhelming and continuous sexual desire (hyper-erotism), as Messalina is supposed to have possessed (Fig. 114), and called nymphomania.

Hyper-erotism has various forms and blends, psychic and harmonic. The impulse may be extremely facile and indiscriminate (polyerotism), or it may be directed to one person to an inordinate and supreme degree (superfixation).

Both excess and defect of desire may lead to professional moralism and declaration of great austerity—combined with persecution of those less austere.

Quantitative anomalies in the endocrine glands may also reveal themselves in very late or very early menstruation. Normality is a varied and uncertain concept here, but we may perhaps claim that menstruation commencing after 18 years of age or before 10 is abnormal. The phenomenon of infantile menstruation is considered in a later chapter.

There are also qualitative endocrine anomalies: here belongs the wide territory of the intermediate type, the *homosexuals*, *androgynes*, *transvestites* and the “*metatropists*” of Hirschfeld, where the rôles of the sexes are reversed.

What has been called hormonically determined homosexuality is very different from the substitutional pseudo-homosexuality to which reference has recently been made. Of course, the orthodox Freudian school of psycho-analysts (Freud and Stekel especially, but *cf.* O. Schwarz) consider homosexuality an acquired neurosis.

Näcke's view is based on cerebral structure; he believes that there are bilateral brain centres of libido and that one—generally the homosexual—atrophies in the course of development. Fliess<sup>3</sup> observed that left-handed men tend to be of less pronounced physical and mental virility and left-handed women of less pronounced femininity than the right-handed. Saaler believed that homosexuality is based on the persistence of a “sexual centre” located on the right side of the brain (controlling the left side of the body) and associated with the characteristics of the opposite sex. But, though some of these observations and deductions may be quite accurate, they hardly offer an adequate explanation of sexual intergrades and inversion. Kräpelin, Ziehen and other psychologists believe that homosexual trends are determined by chance in the early experience of individuals; occurrences which make ineffaceable impressions (*cf.* Kronfeld<sup>4</sup>). The precise genesis of homosexuality is much less



FIG. 114.—Messalina. Bust by F. Alinari, in Florence.

\* See Apert.



important than the need for knowledge of its nature : for public recognition of the fact that homosexuality is not a deed but a desire ; not an action but an emotion.

Homosexual emotion is more easily expressed in contrectation than in detumescence. For where there is detumescence there is a distinct reversion to one of the polymorphous phases of infantile sexuality. Thus the preferential bodily methods of gratification in male homosexuals are either anal or oral.

Hirschfeld <sup>8</sup> has investigated and enumerated homosexual methods of physical gratification. He finds four methods between homosexual men : (a) *Manual* or *digital*, which, according to Hirschfeld, is preferred by 40 per cent. ; (b) *Oral*, preferred by another 40 per cent., and, like the first, often practised mutually ; (c) *Femoral*, preferred by about 12 per cent. ; and (d) *Anal*, the favourite method of only 8 per cent., although this particular action is generally considered typical of male homosexuality, or even identified therewith.



FIG. 115.—Bust of Sappho. Berlin, Altes Museum.

Among homosexual women there are (a) *Digital* contact and gratification, and (b) *Oral*, which is often considered the typical Lesbian, or Sapphic, caress. The (c) *femoral* type of gratification also exists in the modified form of close pressure and friction of thighs and sexual organs : the term *tribadism* (*τριβειν*, to rub) is often applied to this practice alone. Remarkable (d) development of the clitoris sometimes enables women to practise some degree of vaginal insertion, but this is not common among the white races.

Finally, there is the use of the artificial penis or dildo, an instrument of wax or rubber (cf. Figs. 116 and 117), which one woman puts on and inserts into the vagina or anus of her partner (see also Vol. II., pp. 50, 52).

Krafft-Ebing maintains that there are two main types or degrees of feminine homosexuality. He differentiates what he calls *viraginity* in which the mental and

emotional attitude is masculine, and “*gynandrisms*” in which the woman has structural (somatic) resemblances to the male type as well. But Hirschfeld is of opinion, and probably rightly, that we cannot draw any definite distinction here.

The exact shades and grades of abnormality designated androgyny, transvestitism, and Hirschfeld’s “*metatropism*” may be briefly defined.

Androgyny may be somatic and psychic, or psychic only. The somatic idiosyncrasies include a prominent Adam’s apple, deep and strong voice, flat breasts and hair on the face. Psychically, there is great energy, especially for public affairs and political life, or for violent sports : and many of the leading exponents of women’s rights are undoubtedly androgynous to a greater or lesser degree. There is sometimes an attraction and affection for the corresponding intermediate male type, and this combination is not seldom to be found in marriage.

Transvestitism is an allied manifestation, which often approaches neurosis. Transvestites have a profound urge to clothe themselves and behave as members of the opposite sex. This



impulse is so powerful that restraint upon it sometimes causes transvestites to attempt suicide (Talmey). There have been women who endeavoured to enlist as soldiers and even who served in the ranks without being detected till some accident or fatal injury occurred. There is probably a certain androgynous-transvestitism in the frequent use of male pseudonyms by women writers, *e.g.*, George Sand or George Eliot.

What has been called *metatropism* is the subtlest of these manifestations. Metatropism in women means a special attraction to and affection for men of very fragile and even effeminate type; and a markedly protective and dominant attitude towards them. Metatropism,

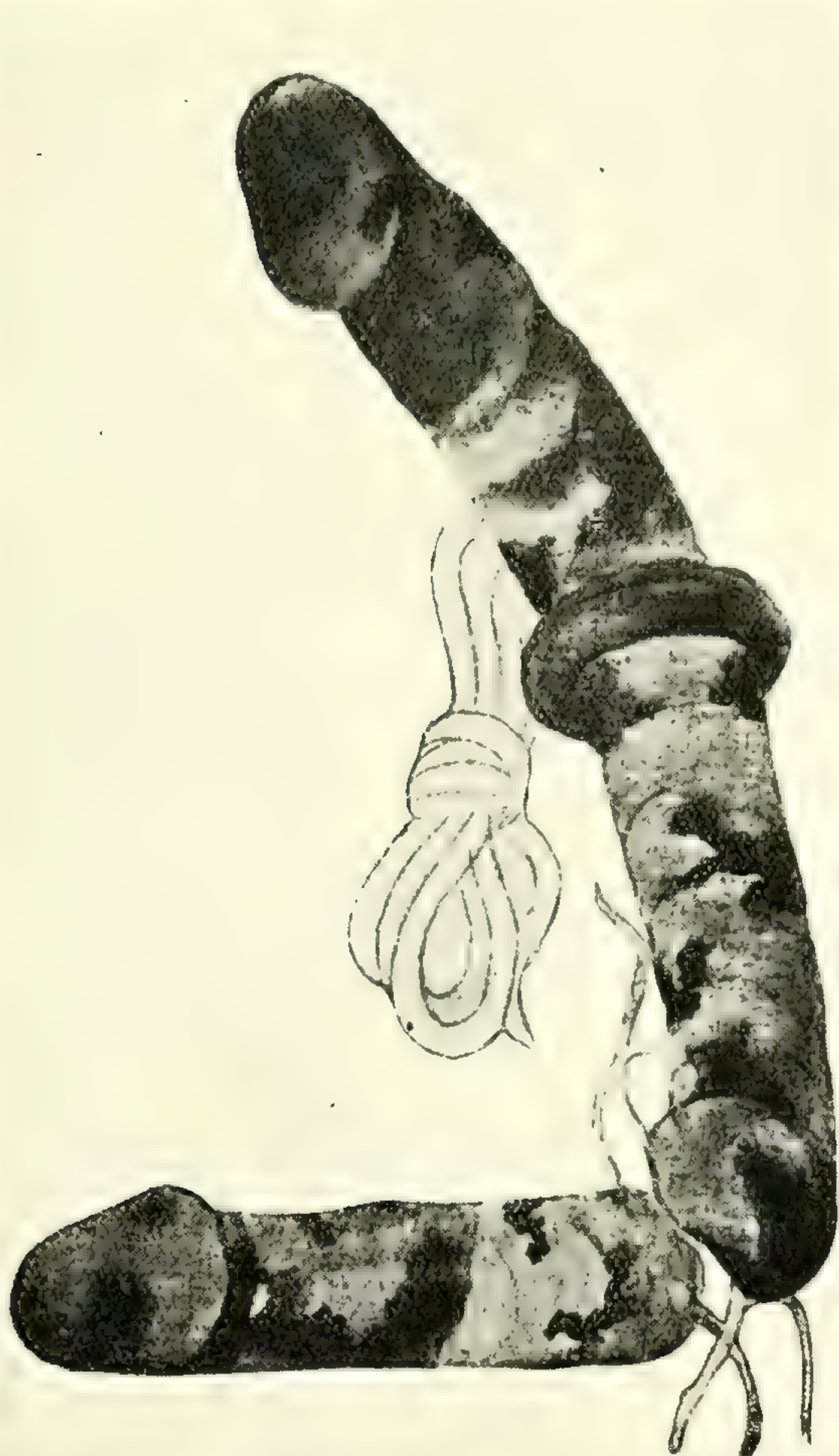


FIG. 116.—Japanese dildo. One is single for solitary gratification. The other is double for use with a partner. (After Krauss.)

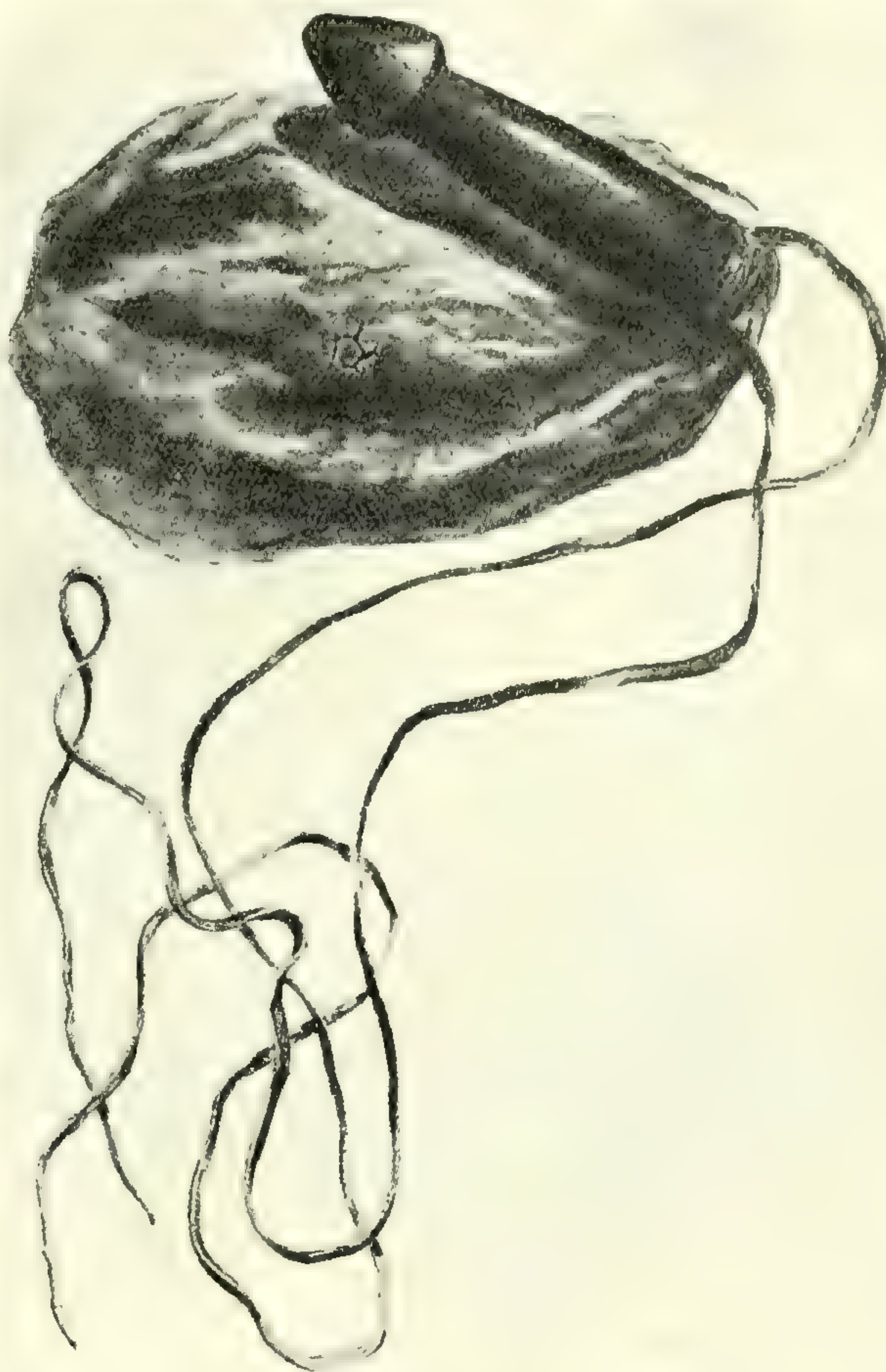


FIG. 117.—Madigo of the Hausa women. It is made of wood covered with leather and perforated, and is provided with strings for attachment to the body. The bag is filled with the diluted sap of the *dalaku* tree.

androgyny and transvestitism are, in short, phenomena merging into one another and different types of sexual intergrades. Although there may be some such manifestations which are of psychic origin or the results of environmental repressions, the fundamental basis is endocrinic disturbances.

We now turn from intersexual types to the negative abnormalities, so called because some important element in the sexual emotion is wanting or repressed. Such a condition is found in contrectation. Here we may find the two forms of genuine auto-erotism: (*a*) habitual masturbation, by choice and not through the compulsion of necessity, but as a preferably adequate form of sexual satisfaction;



(b) Narcissism (the auto-monosexuality of Hirschfeld), in which satisfaction is obtained not directly by means of physical excitation of the individual's own body, but indirectly, through the contemplation of that body.

The failure to achieve detumescence is an important factor in a woman's life. The wish to become a mother and to possess a child without sexual contact is somewhat frequent, and there are some authorities who assert that detumescence must be awakened in girls by the male, whilst the desire to be fondled and caressed is normally always present.

Of great importance are the associative disturbances. Here we have the great group of fetichist manifestations.

Fetichism is to some degree strictly normal, but, when within normal limits, there is always an association between the sexual symbol in the forefront of consciousness and the whole body or whole personality of the human being to whom the symbol appertains. But, in morbid degrees of fetichism, the organic and psychic personality is not associated in the attraction to the special symbol, *e.g.*, the hair or gloves. Even quite apart from the whole body to which they appertained, the symbols may excite and release desire.

Another very frequent and significant associative perversion is algolagnia: a condition in which pain and cruelty provoke voluptuous sexual pleasure. Algolagnia may be either active or passive. Passive algolagnia makes experiences which inspire pain, disgust, discomfort or humiliation in normal people, arouse excitement and pleasure if connected closely with sexual factors and even produce orgasm. This type of response is termed masochism (Fig. 119) from the Austrian author, Leopold von



FIG. 118.—Vulva in a case of habitual masturbation. (After Mayer-Ruegg.)

Sacher Masoch\* (1836–1895), who constantly dealt with it in his stories and essays. The opposite to masochism is sadism, which makes the infliction of discomfort, humiliation, fear and pain on other persons the occasion of sexual excitement, pleasure and satisfaction. It is named after the French author the Marquis de Sade (1740–1814). There is a certain basis for this in the polymorphous perversity of early childhood; and we may possibly even find traces in the wooing and mating of various animal species. Like fetichism, sadism, or rather algolagnia, is interwoven with normal sexuality: biting, pinching and gripping caresses are, in a sense, a manifestation of algolagnia, but one of the most characteristic and pronounced forms is probably flagellation, or the whipping

\* For an account of his life see Ellis,<sup>3</sup> III.



craze. This phenomenon is connected with religious neuroses, ideas of sin and penitence, and has often become an epidemic in mediæval times and in cloisters and even educational institutions.\*

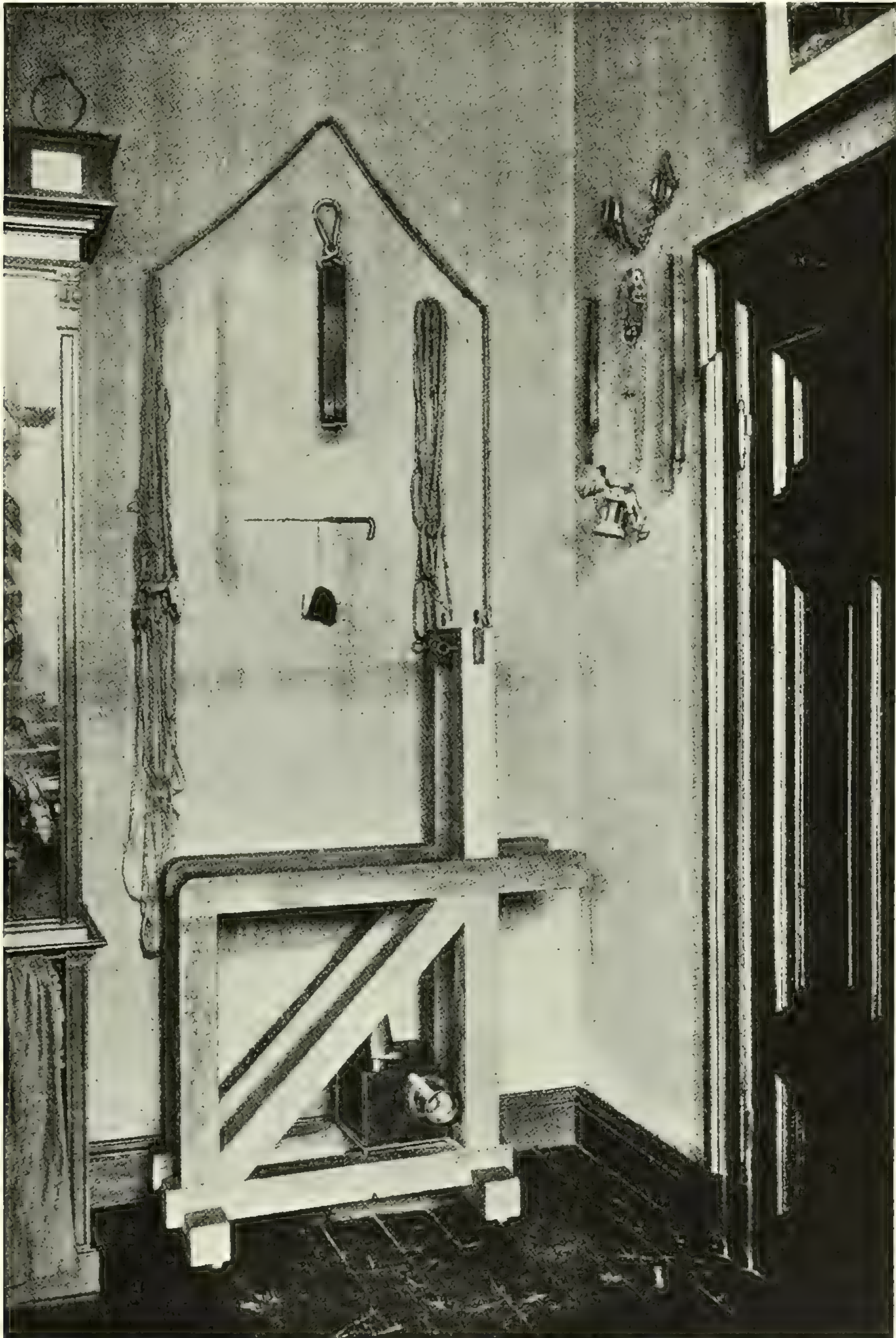


FIG. 119.—Torture chamber in the establishment of a masochist, Hamburg. (After Wulffen.)

It is significant that masochists are often powerfully built, active and virile, and sadists equally often frail and physically feeble ; and there are extreme cases

\* [This theme has been treated with a wealth of illustration from ancient and modern sources by Fuchs and Kind.]



of algolagnia, both passive and active among women. There is an element of pleasure in others' pain or of absolute identification with those who inflict or suffer it in the craze for watching motor-races, sporting events, prize fights, bull and cock fights, hunting and blood sports. This was also the main secret of the popularity

of executions when they were allowed to be witnessed by the public.

The nature of the early stimuli and their association has been demonstrated by Professor Pavlov's experimental tests on dogs. Dogs have an increased flow of saliva at the sight or smell of their food. Pavlov accompanied the offer of food with various sounds, and these were then alone sufficient to cause the signs of hunger and appetite (Conditioned reflexes). Claparède showed that coloured discs were just as impressive as sounds in association with food, and even a startling and unpleasant sensation, such as an electric current, became a source of positive, *i.e.*, to some extent pleasurable excitement when associated with food. It is supposed that there must be some similar cerebral association in algolagnia. Flagellation is more easily understood than other pleasure-pain perversions, since the whipping is generally on the buttocks and thighs, which are so closely adjacent to and nervously interwoven with the genitalia that increased blood supply to these regions helps to create detumescence.

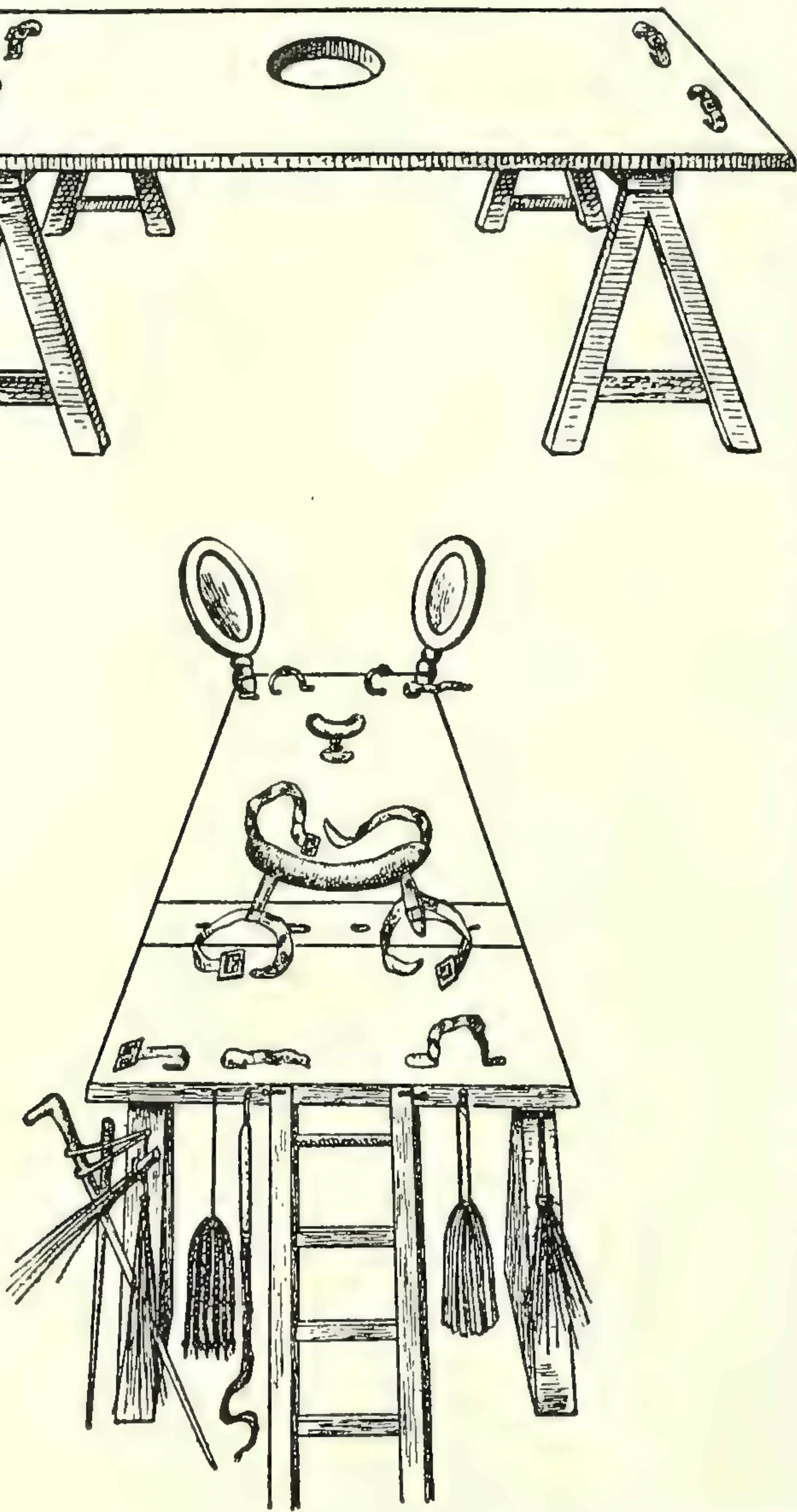


FIG. 120.—Flagellation apparatus. (*Geschl. u. Gesellschaft*, 1912, vii.)

life has its ebb and flow, and in woman's organism there are recurrent changes at every menstruation, as well as during the peculiar stress and strain of puberty, pregnancy and the menopause.

Phenomena connected with repression play an important part and are some of the most fruitful sources of neurosis. If the sexual impulse of any human being is prevented from attaining the relief and release of expression along the lines suitable to their personality there is repression, which manifests itself in various morbid symptoms. Freud considers four neuroses to be of sexual origin, *viz.* :

(1) Neurasthenia, (2) anxiety neuroses, (3) hysteria, and (4) compulsive neuroses.



Endocrine inadequacy or unbalance has much to do with neuroses, as well as the repressive mechanism. The biological framework sets the form as it were for the psychological pattern.

Sexual neurasthenia is very prevalent. Its manifestations begin with fatigue, weakness, failure of memory and judgment, and develop through a variety of

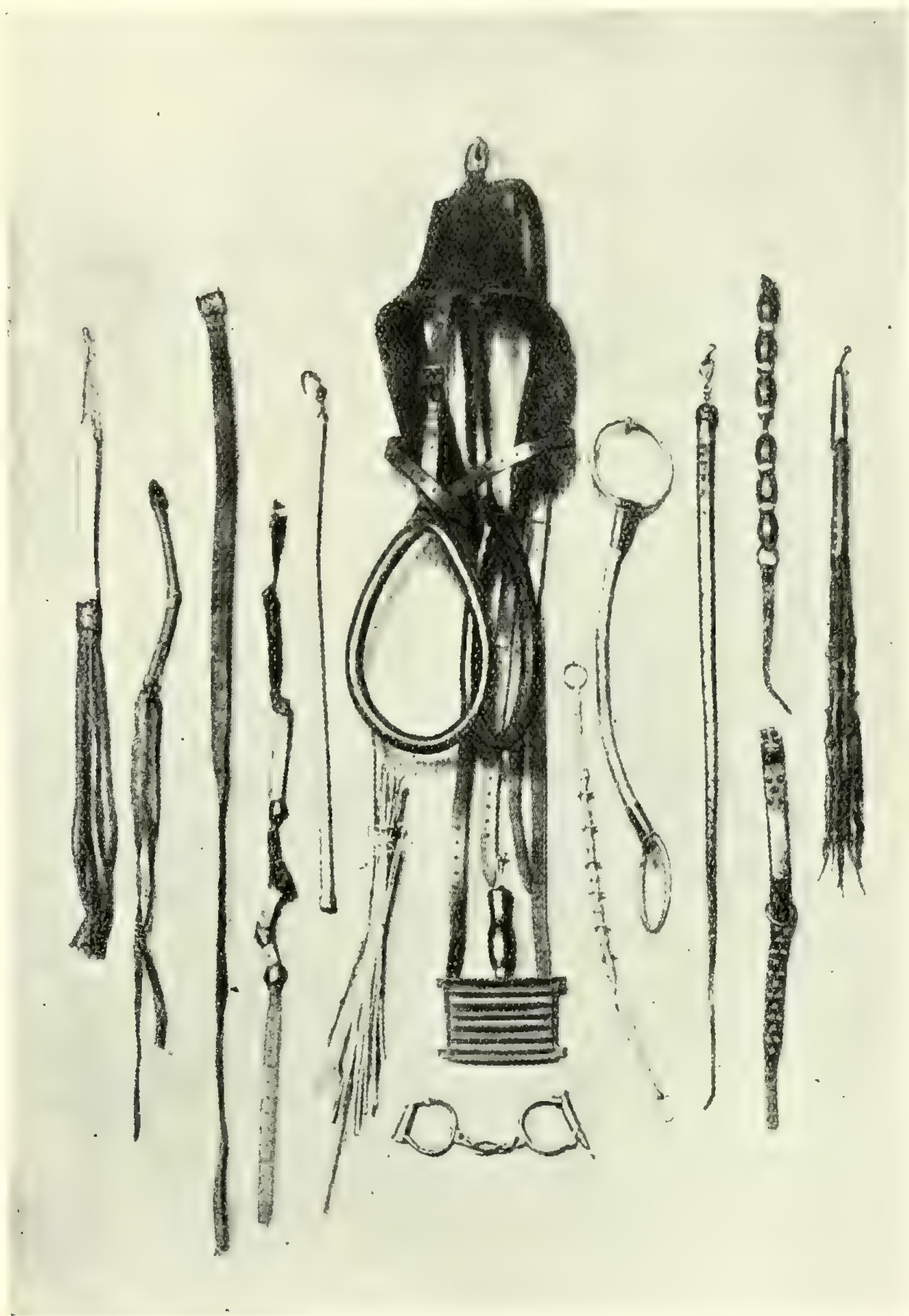


FIG. 121.—Apparatus for masochistic performances seized in the establishment of a Hamburg masseuse. (After Wulffen.)

physical symptoms, such as headaches, pains in the heart and chest, extreme irritability and sensitiveness to noise, inclination to weep, pains in back and loins, palpitations, cold hands and feet and even skin eruptions: in some severe cases violent nausea, vomiting, colics and jaundice. As a rule all these bodily and mental distresses vanish very soon if, and when, there is individually adequate and satisfactory sexual expression. Hysteria derives its name from the Greek term for the womb or belly. But the name is so far misleading in that its manifestations are



not confined wholly to women. The symptoms include trembling, stammering, violent blushing, cramps and faulty muscular co-ordination. There may also be abnormal insensibility to injuries and pain. One of the most curious hysterical forms is vaginismus, in which the vagina closes convulsively before or during intercourse, or under examination. (The male equivalent is *ejaculatio praecox*.) Anxiety



FIG. 122.—Gräfin Auguste Strachwitz, who controlled a sadistic establishment in Berlin.  
(After Wulffen.)

neuroses or phobias include the dread of enclosed spaces (claustrophobia), of empty spaces (agoraphobia), of thunderstorms, of small animals or insects (mice, frogs, worms, spiders), etc. There is also specifically sexual hypochondria, the various forms of which include the exaggerated or chronic dread of contracting venereal disease, the fear and dread of the sexual act, leading to insults and hatred of the partner, whether man or woman, the girl's or woman's fear of defloration and the man's of impotence. Still worse is the fear and suspicion in morbid jealousy,



and religious fanaticism, especially when it is intensified and becomes religious "mania."

All these are, or can be, preliminary to the enormously important compulsive neuroses. For every human individuality must be changed, physically and psychically, if its particular inherent urge to sexual activity—whether normal or abnormal, average or morbid—is denied and inhibited. The emotions thus vehemently repressed, gather momentum and break through or seek to break through in other ways: these subconscious urges towards manifestations are termed neuroses by Freud, and we take this terminology here. The repressed libido tends to regress, or take a backward course along the paths of its individual development, *i.e.*, it returns to infantile forms. For instance, it becomes exhibitionism when in a state of sexual excitement. It is far more frequent and pronounced in men than in women. Among children the impulse of general exposure and display is marked, as among adults in sporting circles and on the stage. But this general human tendency becomes morbid if concentrated or restricted to the genital organs. And, apart from their special morbid idiosyncrasy, exhibitionists are mostly very modest. They have often been habitual masturbators in their youth, and have a sense of guilt and a deep dread of women; these symptoms show that their peculiar sexual trend is based on a sense of their inferiority or inadequacy for normal satisfaction; often there are other concomitant symptoms of degeneration. The act of self-exposure in exhibitionists is always a response to certain fetichist stimuli, and as soon as these stimuli are perceived the exhibitionists tremble, suffer from palpitations and rushes of blood to the head, and lose all control and sense of safety which, otherwise, prevents the exposure of their genital organs. When the compulsive urge ceases the exhibitionist is overwhelmed with shame if the spectator of his act is disgusted or offended; but delighted if the exposure is treated as a joke and received with laughter; and this, too, shows an infantile trend. Among female exhibitionists the breasts or the buttocks are exposed rather than the actual sex organs.

There is also a psychic infantilism which may accompany normally developed genital organs: in these cases the sexual relation has become a sort of childish game and they feel themselves attracted to sexually immature persons or to young children. The personality and manners of these persons tend to be childish in some respects, and there is, sexually, total indifference to the normal adult.

Paidophilia is often combined with exhibitionism. Other sexual types act in a childish manner and wear baby clothes, etc. The reverse trend is specially found in girls of infantile development who are drawn towards elderly men (gerontophilia); or the same type of abnormality may appear in elderly or old men as an irresistible inclination towards children, and leads to distressing crimes and assaults.

An even more primitive abnormality is coprophilia, in which the sexual urge regresses and deflects into special interest in the organs and functions of excretion. The coprophilia of the infantile polymorphous phase is normally replaced by interest in the opposite sex and by certain æsthetic considerations. If the heterosexual inclination is repressed by morbid codes of morality, lack of opportunity or sense of inferiority—then the sense of disgust is obliterated and the sex impulse gratifies itself in its most primitive undifferentiated manner, extending from mere watching the excretory processes of others to actual manipulation and consumption of the excremental products.

Compulsive neuroses may also undermine male potency and cause premature



ejaculation. Or they may manifest as a horror of sex and of all sexual "motifs" in art and letters: in fact, as sexphobia, which seeks out and pursues all sexual objects and activities in order to denounce and punish. Hence repeated reports, police drives, the manufacture of "crimes," the mutilation and destruction of works of art. Some sexphobiacs collect pictures and books of erotic type and then soil and mangle them; or they throw dirt or ink on women's dresses or statues, pictures, etc., and thereby obtain sexual gratification. Religious ideas of expiation and penance are often associated with flagellation, and endocrine unbalance, as in puberty or after the climacteric in women, is often a factor in their production.

#### (e) Moral Degeneracy

Unrestrained sexual gratification may sometimes lead to complete anæsthesia in normal relationships combined with the obliteration of all normal adult inhibitions. These cases are extremely rare, and probably even rarer in women than in men; they have no anthropological significance, and may, therefore, be passed over in this study.

### 5. LATE MARRIAGES, SUICIDE AND CRIME

Vital statistics show that within the German Republic in 60-65 cases of marriage out of every 10,000 the woman is over 40 and sometimes over 45 years of age. In many such marriages the husband is younger than the wife. From the point of view of the biologist and vital statistician, these marriages are designated abnormal.

In Berlin in the year 1887, 14,451 women are recorded in the Civil Marriage Registers: of these 119 were between 50 and 65, and five even above 65 years of age.

Between 1891 and 1893, among 51,603 women whose marriages were registered, no less than 494 were over 50 years old and 26 were over 60. On 69 occasions men between 25 and 45 years are recorded as marrying women between 50 and 65. Five men between 30 and 35 married women between 55 and 60, and one man under 30 years of age married a woman in her early 60's.

[In England and Wales there were 311,847 marriages in 1931. Between the ages of 40 and 45, 7304 women were married; between 50 and 64, 5944; and between 75 and 79, 71; 7087 women were 50 and over, and 81 were 70 and over when they married. On seven occasions men between 25 and 30 married women between 50 and 55. The mean age at marriage was 28.99 for men and 26.42 for women.]

Ludwig Fuld has observed that it is a mistake to attribute all these German marriages to economic and financial motives of the most discreditable kind, as often occurs, and that psychologically these marriages are often quite comprehensible, as is shown in some celebrated cases, both historical and modern, and not only in the northern races, which mature late, but among Italians. The percentage of suicide among women after middle life from professional motives is also high.

We shall deal more fully in a later section of this book with women suicides. But it is relevant to vital statistics here to compare the suicide ratio as between men and women and as between married and single persons.

Bertillon found that in France there are many more suicides of widows than of married women, and of childless women than mothers of families. His son, J. Bertillon, junior, continued investigations on these lines. He took as his main



material the people of Sweden, and found that at the age of 25 single men and women, widowers and widows, were twice as much inclined to suicide as husbands and wives, and, at 70 years of age, the ratio was 11-1.

In the period investigated, which included other countries as well as Sweden, over three times as many men took their lives, the proportion being about the same in modern England and Wales, the 1931 figures being 3624 men and 1523 women.

In Berlin, between 1892 and 1901, the tendency is pronounced : 3624 male suicides, 1163 female ; even the proportional rate is the same : 3 to 1. No doubt the struggle for existence in modern life, both industrial and professional, fully accounts for this preponderance of the breadwinners and workers outside the home. But there is a change in the Berlin figures as regards the ratio of single to married suicides among the men. Here the numbers are almost equal and the married men preponderate very slightly : 1833 to 1801. ("Single" here includes widowers and husbands divorced or separated from their wives.) Among female suicides there is a striking contrast : 431 married, 808 single, widowed, separated or divorced. So we may assume that celibacy is one of the main factors, if not the main factor, in female suicide, and that this factor operates in two ways. First, where the celibacy is a matter of fact, not of form—in promoting repressions and psycho-neurotic symptoms ; and, secondly, where intercourse outside marriage has been fruitful, there is the social ban on the unmarried woman. The statistics collected by Schermers from the Netherlands show the highest suicide rate among widows and divorced or separated women and that the rate is higher among married men than among bachelors.

Gaupp<sup>2</sup> has shown the influence of the periodic function upon suicide, and his researches have been confirmed by Pilcz, demonstrating its significance.

Among 211 women, 36 per cent. were either at the period or just about to menstruate. Among 322 women, 22 per cent. had some morbid condition of the genital organs, and among 256, one-fifth of the number (20 per cent.) were found to be with child. Pilcz used Viennese material : he found that among 1671 suicides, 1245 were men, 426 women.

The age ratios were as follows :

Age.							Men.	Women.
							Per cent.	Per cent.
Under 10 years	.	.	.	.	.	.	1.0	—
Between 11 and 15 years	.	.	.	.	.	.	1.53	1.0
„ 16 „ 20	„	.	.	.	.	.	5.6	12.2
„ 21 „ 30	„	.	.	.	.	.	26.7	37.4
„ 31 „ 40	„	.	.	.	.	.	22.3	18.3
„ 41 „ 50	„	.	.	.	.	.	19.8	13.4
„ 51 „ 60	„	.	.	.	.	.	13.7	11.2
„ 61 „ 70	„	.	.	.	.	.	7.8	4.0
„ 71 „ 80	„	.	.	.	.	.	2.0	2.0
Over 80 years	.	.	.	.	.	.	0.3	—

The peak lies in the third decade of life ; the period of the most imperious sexual urge, and one of the results of our false moral code. The rate rises rapidly amongst women and falls rapidly as well.



There are sex differences in the method of suicide preferred. In England and Wales in 1931 the figures were :

	Method of Suicide among	
	(a) Men.	(b) Women.
Poison (including gas). . . . .	1302	825
Hanging . . . . .	614	122
Shooting . . . . .	254	13
Drowning . . . . .	584	329

Thus there is a marked male preference for such active procedures as shooting and hanging ; among women, for the passive experience of poisoning and drowning.

It would be of considerable interest, anthropologically and psychologically, to ascertain the share of respective *races* and ethnic stocks in suicide. But there are few available data. Tarnowsky<sup>5</sup> gives some details about Japan, where the number of female suicides is very great in comparison with Europe. Tarnowsky reckons that annually 1800 Japanese women and girls take their own lives from motives of jealousy, domestic grief and unhappiness in love, whereas, for instance, in France, there are only 500 female suicides in the year. The extreme youth of many Japanese girls who kill themselves has also been noted, as well as the number who suffer from mental disturbance amounting to insanity.

A question of outstanding importance in relation to female psychology is that of *crime*.

The concept of crime varies greatly from country to country and century to century, even, to some degree, from class to class. Moreover, there are certain *legal* "crimes," such as attempts on the life of the new-born child, or attempts to remove the child already conceived, which can hardly be committed except by women. And these should be considered, both ethically and statistically, as in a different category from other acts of manslaughter or murder. And we must also take into consideration the fact that women are more frequently and easily acquitted in the Law Courts than men.

The eminent Belgian sociologist, Quételet, writes :

"When we try to analyse the facts of criminality, it seems to me we must conclude that (apart from physical modesty) the moral standards of men and women are far less dissimilar than is conventionally supposed. The influence of custom and habit can best be estimated in observing the share of each sex in crimes which do not involve either physical force or modesty ; *i.e.*, in such things as thefts, perjuries, false witness, commercial and financial frauds, etc." And he stresses the importance of bodily weakness and a dependent and secluded life in diminishing the criminality among women by diminishing opportunity.

Later investigators came to the same conclusion. Georg Mayr compared Quételet's data with the criminal statistics of the Bavarian assizes from 1840-1866 and found a fairly constant rate of feminine criminality.

Some official German statistics of the year 1882 showed that to every 100 males sentenced for criminal conduct there were 23·4 females. Most of the women were convicted and sentenced for thefts, then came insulting language, murder and perjury. The "murders" included, of course, infanticide and feticide.



We must also bear in mind that legal "crimes" may vary from one country to another. Granier, General Inspector in the French Ministry for Home Affairs, who had access to detailed statistics, including very recent years, estimated female criminality at 13 per cent. of the whole. In 1902 it was estimated at 14 per cent., in 1901 at 13·26 per cent. Herz has dealt similarly with material from Austria. He finds a slight but continual decrease since 1869 (15·2 per cent. in 1869 and 13·9 per cent. in 1899); but this may be due to alterations in the Penal Laws, and, in any case, both figures are not widely different from the French 14 per cent.

Recidivation shows the same tendency.

Von Friesen's statistics for Germany in the period between 1898 and 1902 show that, for serious crimes, 56·5 per cent. of the men convicted and sentenced and 70·9 per cent. of the women were first offenders. The professional criminal seems to be generally masculine.

But we must not forget that the larger number of male convictions does not prove that the inclinations of women are proportionately more law-abiding and social. And this for a variety of reasons.

Age has a certain influence when considering recidivists. Feminine criminality, according to Herz, develops at an earlier age and then, after sinking in mature years, rises between 40 and 60. Herz rightly correlates these fluctuations with physiological and economic conditions, both those peculiar to women and those affecting the whole community.

According to further investigations and statistical computations by v. Friesen<sup>2</sup> for the period between 1903 and 1910 (inclusive) on German official material (the post-war years are not representative), the majority of women's criminal offences were against property. The only noticeable exceptions were the convictions for the specific actions of abortion and connivance thereat, and of procuring. But, in the case of feminine offences against property, as has been shown in such statistical graphs as those published by Granier, the curve rises and falls together with the cost of living. And it is also significant that between 40 and 60 there is a sudden rise in the percentage of criminality among women to a higher amount than among men.

Moreover, the whole social climate and the habits of a community may diminish or enhance the share of women in crime. Women who live in subjection and segregation have far less chance of active crime than their menfolk. Thus we may interpret the statement of Tarnowsky<sup>5</sup> that in Japan women's criminality is only 8 per cent. of the total, as a result of the traditional stringent subordination of women in Japanese law and custom. There can be no doubt that with the altered and independent status of women and their direct participation in the struggle for existence they will take a greater share in breaking the laws. Hausner has pointed this out already; according to him, in the northern countries of Europe, where women take such a share, crimes are more frequent in comparison with the South.

Wulffen<sup>2</sup> has ably pointed out these interactions of sex and crime. He says :

"The passive sexuality of women generally precludes sexual crimes. And our penal codes regard as the gravest sexual crime, an action which can only be performed by a man, namely, rape and indecent assault. It is true that women can, and sometimes do connive at, or act as accessories in such cases; and a homosexual woman might quite conceivably be guilty of



indecent assault on another woman. Women can, however (under German Law), be guilty of indecency 'by force' or indecent assault on boys under 14 years. Women supply a fairly high percentage of the convictions in these scandals (circulation of indecent literature excluded). Exhibitionism is not common, but such acts as copulation in the open or in taverns, obscene language, etc. The most characteristic sexual crime among women is procuration, which corresponds to certain traits in the female character. The male procurer specialises more in the actual traffic in girls. In 1903, there were (in Germany) 1296 convictions of married women for procuring; 755 of these women were under 40 years of age and, therefore, presumably had young children under their care. . . . Exposure of young babies and abortion are peculiarly feminine actions: even the professional abortionist is generally a woman. The fact that infanticide has diminished is no proof of moral betterment. There is a comparatively large number of women among those persons convicted of burglary, insulting language, slight and severe assault, embezzlement, receiving stolen property and commercial and financial frauds: as might indeed have been expected."

To sum up: *women are less addicted to crime than men; and their increased direct share in the struggle for existence, in wage earning and personal responsibility may certainly be expected to raise the number of crimes committed by women.*

As Herz has pointed out, the crimes of men are, on the whole, more violent and brutal, those of women more cunning and treacherous, and this has naturally a physiological basis.

[In England the chief courts for criminal trials are the Assizes (including the Central Criminal Court) and the Courts of Quarter Sessions.

Offences are either "indictable" or "non-indictable." The broad distinction is that the indictable offences are dealt with at the Assizes and Quarter Sessions, whilst the non-indictable class is handled in the Courts of Summary Jurisdiction. In certain cases, however, indictable offences can be dealt with summarily and *vice-versâ*.

At the Assizes in England and Wales in 1930, 3324 were dealt with, of which 2985 were males and 339 females.

The following table illustrates various types of crime and the division of responsibility between the sexes.

Offence.	Number for Trial.	♂	♀
Murder . . . . .	40	29	11
Infanticide . . . . .	14	—	14
Assault . . . . .	20	19	1
Procuring abortion . . . . .	53	15	38
Rape . . . . .	51 (26 acquitted)	51	—
Procuration . . . . .	10	7	3
Burglary . . . . .	99	97	2
Housebreaking . . . . .	151	148	3
Robbery . . . . .	92	90	2
Embezzlement . . . . .	22	22	—
Falsifying accounts . . . . .	4	4	—
Receiving stolen goods . . . . .	72	64	8
Forgery and uttering (Felony) . . . . .	130	121	9
Indecent exposure . . . . .	1*	1	—

\* Probably exhibitionism. In Zürich there were 1,747 cases in three years (Hentig).



The figures for the Quarter Sessions for the same year were :

Offence.	Number for Trial.	♂	♀
Assault . . . . .	32	31	1
Procuring abortion . . . . .	3	2	1
Rape (attempts, etc.) . . . . .	3	3	—
Procuration . . . . .	—	—	—
Burglary . . . . .	274	269	5
Housebreaking . . . . .	585	567	18
Robbery . . . . .	11	11	—
Embezzlement . . . . .	33	32	1
Falsifying accounts . . . . .	6	6	—
Receiving stolen goods . . . . .	310	275	35
Forgery and uttering (Felony) . . . . .	19	15	4
Indecent exposure . . . . .	1	1	—
Keeping disorderly houses . . . . .	80	73	5

The ages of those convicted are of some interest. Forty-four were convicted of procuring abortion ; of these 10 were men and 34 women. Two of the men were between 16 and 21 ; three men and nine women between 21 and 30 ; and 10 women between 30 and 40. For procuration one woman between 16 and 21 was convicted. In the offences against property the most likely ages seem to be between 21 and 30, although two women between 40 and 50 were convicted.

The figures for the Courts of Summary Jurisdiction are also of interest. For example, taking convicted persons :

Indictable Offence.	Number of Persons.	♂	♀
Malicious wounding (misdemeanour) . . . . .	565	521	44
Larceny from the person . . . . .	323	217	106
Larceny in house . . . . .	319	272	47
Larceny by a servant . . . . .	959	821	138
Embezzlement . . . . .	453	445	8
Falsifying accounts * . . . . .	34	27	7

The total number convicted, including those in the Juvenile Courts, were 22,616, of which 20,059 were male and 2557 were female. Of these, 437 males were under 14 years old and only 18 females. The peak is again between 21 and under 30, when 6535 men were convicted and 636 women. At all the Courts 56,776 were convicted on the charge proved for indictable offences. Of these 49,678 were men and 7098 were women.

Amongst young people the same preponderance of male offenders is noticeable. The Courts made extensive use of the Probation of Offenders Act, 1907 : 11,206 boys under 16 were found guilty, and of these 89 per cent. were dealt with under the Act, whilst of the 789 girls, 91 per cent. were likewise dealt with.

The figures for Scotland in 1931 are very similar to those of England and Wales. For crimes against the person there were 2377 apprehensions and citations, of which 92 were women ; in crimes against property with violence, the number was 2709,

\* Including a limited company.



2644 men and 65 women ; and *without* violence, 11,020, of which 1961 were women. Indecent exposure showed 372 cases, of which 106 were women. All these figures denote persons proceeded against whose cases were disposed of within the year.

These figures indicate that women in England are more law-abiding than men, and boys much more liable to come into conflict with the law than girls. Even the figures for drunkenness for 1931 show a great preponderance of men. Total proceedings were 49,029, of which 35,212 men and 7131 women were convicted. Of these 582 were suspected of being drunk from methylated spirit, although of the total number the women's portion was only 173.

It is clear that the greater activity of the male must be responsible, to a certain extent, for these figures. Above all, the increase in juvenile crime among boys suggests that unemployment and distress are forcing the young males into conflict with the established order. Offences against women do not appear to be increasing to any alarming extent. Indeed, the persons tried for rape in 1929 were 41, and in 1930, 54, whilst the annual average, 1900-1904, was 49 ; and 1915-1919, 58. On the other hand, so-called " indecency with males " is on the increase, due doubtless to the greater toleration exercised as scientific knowledge begins to be understood by those responsible for the administration of the law.

In a consideration of the above figures it must be remembered to whom they specifically refer. It is doubtless true that young robbers who stage smash-and-grab raids are assisted by their girl friends who probably share the proceeds when the robberies are successful ; they rarely, however, are caught in the act. Similarly, it is not without some significance that the police are largely male. Women are certainly not apprehended to the same extent as men. What their inclinations are we have no means of telling.]

## 6. THE CRIMINAL WOMAN FROM THE ANTHROPOLOGICAL ASPECT

It is well known that of recent years there have been attempts to prove that criminals are specimens of so-called atavism : " throw-backs " to our ancestral and primitive types of constitution and disposition ; and that they exhibited more or less pronounced degenerative symptoms or stigmata of degeneration, especially in the structure of their skulls and brains. The Italian, Cesare Lombroso (with whom this school of criminal anthropology is identified) and his pupils even went so far as to maintain that special combinations of these stigmata were typical of special sorts of law breakers, and they attempted, as it were, to standardise a series of criminal types.

Lombroso and Ferrero collaborated in a work on woman as prostitute and as criminal. In this treatise it was pointed out that :

" The accumulated figures do not amount to much, but this result is only natural. For if external differentiations between criminal and normal subjects in general are few, they are still fewer in the female than in the male. The following are our most important conclusions : Stature, stretch of arms and length of limbs are less in all female criminals than in normals, and in proportion to the stature the average weight of murderesses is greater than in moral women. Thieves are inferior in cranial capacity and circumference and their cranial diameters are less ; but, on the other hand, their facial diameters are larger, especially in the jaw. Criminals have the darker hair and eyes ; greyness is more than twice as frequent in the criminal woman, and in the latter baldness is less common both in youth and maturity, and the same is true of wrinkles, these being markedly more frequent in criminals of ripe years."



Lombroso has tabulated the alleged cranial stigmata of degeneration in the cranial structure, and he remarks that :

“The synopsis shows the marked difference between the skulls of those women who were convicted of infanticide—the least abnormal of offences—and those of the other criminals. The infanticidal women show far less frequent instances of asymmetry, strabismus, masculine features, anomalies of teeth and cheek bones. But peculiarities in the shape of the ears and hydrocephalic heads are common among them. The maxima of cranial asymmetry and strabismus are found among the thieves, poisoners and (other) murderesses: pronounced masculinity as well as a Mongolian type of face are most common among murderesses. Women convicted of manslaughter and murder by poisoning had the largest number of cases of cranial depression and dental diastema, and, together with women guilty of arson, the largest number of nasal defects and deformities. Murderesses, poisoners and women guilty of arson had the highest percentage of prominent cheek-bones, massive jaws and facial asymmetry. Thus we find that the degenerative stigmata are commoner among all other criminal women than among those guilty of infanticide, especially among murderesses and poisoners.”

Both French and German criminologists opposed and criticised the views of Lombroso and his school with much energy. Of late their chief opponent has been A. Baer, the physician who has for many years been in charge of the prison of Plötzensee near Berlin. He has dealt with the subject in detail and arrives at the following conclusion :

“We have frequently touched on the problem of crime as a result of individual organisation. But all the structural anomalies which we find in criminals do not suffice to establish this connection as actual and specific. There is no particular idiosyncrasy in the human organism which can enable us to deduce that the particular person thus deformed or differentiated must necessarily be a criminal. As we have repeatedly emphasised, many criminals and even persons guilty of repeated and grave criminal offences from their youth up, appear perfectly normal in physique and mental endowment: and, on the other hand, many persons of conspicuously abnormal or deformed appearance have never shown signs of criminal tendencies. We have come to the conclusion that, in cases where the individuality must be recognised as predisposing to crime, there is something definitely pathological and that we have to deal not with a consciously responsible law breaker but with a mental case.”

And in a later section of his book he says :

“If there are many criminals who have grave physical defects and deformities—especially cranial and facial anomalies—not the least of the contributory causes is the class and the early environment of the majority of persons convicted of crimes. They spring, very largely, from the poorest and most primitive sections of the community, among whom the growing child is most unsuitably and insufficiently fed and cared for in the most formative years. Is it possible seriously to contend that there is a definite relation of cause and effect, between a well-shaped or normal skull and high moral character; between an unshapely head and criminality? We must most unequivocally reject such reasoning: no man or woman becomes a criminal because of the structure of his or her skull. Where there is a proved coincidence of criminality and structural anomaly, the individual organism in question is not physiologically normal, but pathological: and the crime is the action of a victim of mental aberration or defect.”

When Baer wrote these words the enormously significant results of modern endocrinology were hardly known. We have pointed out that disturbances of hormonal secretion—whether excessive or defective—create a special predisposition to certain criminal actions and habits. Clearly, we must not attempt to account for all crimes, nor explain all anti-social and criminal personalities in terms of their ductless glands. It is especially misleading and unjustified to class prostitutes as criminals or semi-criminals! They are a special group, and belong to a category



of their own, although many of them are more easily drawn into crime than girls and women who recognise the traditional social code and live under the protection of the family.

Lombroso is completely mistaken when he assumes a crime must accompany certain physical and external anomalies. This does not mean, on the other hand, that criminals cannot have characteristic features and definite stigmata. And pathological manifestations do not necessarily amount to mental disease and complete irresponsibility. Baer admits the frequency of pathological features among criminals, and claims that these are the result of bad environment acting on the immature organism and deflecting its normal development. The tendency to criminal and anti-social behaviour and the abnormal formation of skull and brain often arise from one and the same cause; the internal secretions. The physique and appearance are the somatic and the crime the psychic aspect of the inherent endocrine unbalance. Measurements are useless, however minute and numerous, without simultaneous study of the whole individuality. In England the death-blow to the theory of the criminal type was given by Charles Goring, who emphatically declared that there was no such thing. Goddard, in the United States, a year after the publication of Goring's book, gave it as his opinion that from 25 to 50 per cent. of the persons then in prison were mentally defective.

Buschan<sup>5</sup> has made a more extensive study of the problem of crime in women. He shows that the criminality of women rises and falls with their whole range of vital energy in a recurrent cycle, culminating during menstruation and the menopause. The crimes committed during the menstrual period are generally of a more violent character than those centring round the change of life, *e.g.*, murder, arson, breach of the peace; contrasting with libel, perjury, minor crimes against property, and procuration. But there is also an inclination to violence shortly after child-birth and during lactation. And as the disturbance and suppression of normal, vital, feminine functions is constitutionally due to endocrine anomalies and disturbances, it is possible to speak of physiologically defective, unbalanced and potentially criminal women.

Paul Näcke, an alienist in charge at the Hubertusburg Asylum, has written a study of crime and insanity in woman which shows clearly the frequency with which mental affliction is combined with crime.

He says: "In a group of 53 women who entered the asylum, 2 came straight from preliminary detention; 7 from the reformatory, 7 from prison and 37 from penal servitude: of these 53 women and girls, 8 were certainly mentally afflicted at the date of their latest offence (and yet were punished). And 14 were, in all probability, also mentally afflicted, or at least no longer in a normal state of mind." We may, therefore, concur with Näcke's opinion that "Among these 53 women, at least between 20 per cent. and 25 per cent. (or between one-fifth and one quarter) were condemned for actions for which they were not fully responsible; certainly a very high percentage which, however, is confirmed by other independent observations."

There is a closer analysis of these offences as follows, referring always to the latest conviction, previous to incarceration in the asylum.

	Cases.	Percentage.
Larceny . . . . .	27	51
Arson . . . . .	9	17
Vagabondage and mendicancy . . . . .	5	9.4
Manslaughter, actual or attempted . . . . .	4	7.5



There were also 4 cases of direct fraud, 2 of perjury, and 2 of persistent prostitution.

There were 4 cases which had never been in collision with the law ; 11 which seldom, 12 frequently, and 25 habitually. Habitual offenders are in a percentage of 71.1 to the whole. They were mainly thieves, with other occasional offences. Crimes of passion are not found in this list at all.

It is of some interest to observe the types of mental affliction among his criminal patients as recorded by Näcke.

There were apparently 15 forms of "mania" among the women on their reception in the asylum ; 18 of paranoia, 2 paralytics, 5 of epilepsy, both with and without psychotic symptoms, 4 of hysterical delirium and 3 of idiocy. The paranoics, epileptics and idiots were most frequently convicted for manslaughter ; and the epileptics and imbeciles for vagabondage which is often associated with larceny and prostitution. No less than half the number of habitual vagabonds (8 out of 16) were imbecile or idiotic. Eight persons out of the total showed unmistakable symptoms of primary or secondary "moral insanity."

Többen has analysed cases of arson in detail. Among 100 cases he ascribed the motives to the deed in the following manner :

Revenge and hatred, 38 cases ; influence of alcohol, 6 ; avarice and need of money, 22 ; nostalgia, 7 ; concealment of some other offence, 4 ; attempted escape from detention, 7 ; pleasure in fire, 5 ; miscellaneous, 11.

The comparative incidence of sexual crimes before and after the war has been investigated by v. Reitzenstein,<sup>7</sup> who based his figures on Heindl's work. He dealt with the three largest German cities : Berlin, Hamburg and Munich, and included the statistics for theft in order to compare results with another category of offence. Theft was found to have increased enormously between 1910 and 1919 : it almost doubled in Berlin and Hamburg and quintupled in Munich. On the other hand, the number of sex offences—with a few exceptions—decreased, and some of these offences were greatly diminished. (The list included the exposure of children, infanticide, abortion, indecent exposure, sale of indecent literature, procuration, living on a woman's immoral earnings, rape and indecent assault, pæderasty, assaults on minors and children, adultery and bigamy.)

Even if we attribute much of this decrease to the absence of many members of the police force at the front and to the more liberal views of the administration of justice, which began to prevail, it is clear that there has been no widespread moral deterioration. Greater liberty and leisure, more opportunities of recreation and self-expression lead to fewer morbid repressions and substitute gratifications.



## CHAPTER III

### WOMAN IN HER ÆSTHETIC ASPECT

#### 1. FEMININE BEAUTY

ACCORDING to Schopenhauer, the "beauty" of woman—"the squat, narrow-shouldered, wide-hipped and short-legged sex," is naught but a delusion of the "masculine brain clouded by the fumes of instinct." But the majority of men remain of a different opinion.

Anthropologists have endeavoured to analyse and define "beauty." Cordier, in 1860, maintained—in a thesis presented to the Anthropological Society of Paris—that there was no *absolute* beauty in human physique, but a variety of racial types and ideals, and, therefore, no race could claim a monopoly of beauty.

Delaunay<sup>3</sup> disputed this on the basis of the so-called *organotrophic laws* formulated by Claude Bernard, who believed that every organ and portion of the human form possessed a special optimum of development and that harmonious proportion and relation of these organs constituted beauty in each human individual.

But we can hardly investigate and formulate the special model types for each and every race; nor can anyone seriously maintain the existence of absolute and eternal æsthetic laws in these matters. The negress and the Kalmuck girls are as lovely in the eyes of the men of their races as the Madonnas of Raphaël were to their painter. But we may assume that a certain vital, wholesome normality is essential to loveliness in women. The body should be capable of fulfilling its special sexual and racial functions. Eckstein has pointed out that this is merely an extension of the demand that *all* organs of the body should be functionally fit in order to be æsthetically pleasing; *e.g.*, eyes, teeth, shape of head and face. Further, Eckstein continues, these special racial types perpetuate themselves by sexual selection.

Moreover, we shall see that a greater or lesser degree of feminine attractiveness or comeliness is largely dependent on material conditions and grade of culture in each individual and racial example.

#### 2. CONDITIONS WHICH PROMOTE OR HINDER BEAUTY IN WOMEN

The basic requisite of beauty and physical attractiveness for men of normal emotions and sensations in their partners is definitely sexual. The beautiful woman, the lovely maiden, the comely matron, are all definitely and unmistakably *feminine*. And this pronounced femininity is dependent on harmoniously balanced internal secretions (see Chapter I.). Smoothness of skin, clearness of complexion, wealth of hair, pitch of voice, grace of movement and the special contours of hips and bosom, all depend on these endocrines which also influence mental and emotional characteristics. And the influences, organic or environmental, which wither and diminish these physical characteristics, which deflect them on masculine lines, or which exaggerate them crudely, tend to destroy beauty.



Material conditions, of climate, habit and food, have much influence in these respects, and we may even suppose that, to a certain extent, the development and differentiation of the races is the result of the effect of environment and other factors on the glands of internal secretion.

Psychic factors are second only to organic. Sustained heavy work, especially



FIG. 123.—Sipibo women from Peru showing masculine cast of countenance.

muscular work, is not propitious and may influence offspring, and thus affect the racial type for the worse.

It has been said that only a temperate climate permits the most perfect beauty to develop. And this is undoubtedly the case if we limit beauty to our European standards and concepts. But is there not another potent factor at work here, more subtle than sunlight and air, moisture and warmth: namely, the position and



consideration accorded to women in any particular race, state or community? Education and selection, the enhancement of the human individuality, physical and mental, and discriminating parenthood may do much to form and preserve a high standard of feminine beauty. And we do not find that physical attraction



FIG. 124.—Ahuishiri (Zaparo, Rio Napo) girl with masculine appearance. (Photo, G. Hübner.)

or health survives largely in peoples whose women are worked like beasts of burden from childhood, and valued almost solely as slave labour.

Riehl has pointed out that among primitive peoples and also in the habitually under-nourished and overworked sections of civilised communities there is a partial obliteration of sexual differences in appearance, and this obliteration may be observed equally among reactionary peasant communities inbred and remote from the modern ideas and amenities and in the torpid proletarian wage-earners of our cities.



The heads and faces of an old man and an old woman from these *milieus* are as like as two pins.

The marked (*asexual* rather than masculine) aspect of many women in primitive



FIG. 125.—Conibo (Rio Ucayli) girl with masculine appearance. (Photo, G. Hübner.)

communities is strikingly shown by the illustrations (Figs. 123–126) of natives from South America and North Africa.\*

Waitz has made careful investigations into the influence of climate and diet on human physique. But he emphasises the concurrent influences of man's particular stage of culture and progress in the higher stages of evolution, for then

\* Fritsch <sup>4</sup> makes the same observation regarding the South African Bushmen.



he is less subject to climatic and nutritional forces. This is another aspect of human domination—however gradual—of the material environment. One phase of this domination and moulding of environment, both of mind and body, is *education* in its widest sense. Thus we see particularly fine and symmetrically beautiful types of form and face among many men and women of the governing and possessing classes. This fine physical endowment is due, in part, to proper food and care in



FIG. 126.—Bedouin woman from Tunis with masculine cast of countenance.

early years, and may become conspicuously hereditary in certain favoured stocks. although among the poorest and humblest strata of many European nations also we find many pretty and even beautiful girls.

Du Chaillu makes the following comments on the Sea Lapps, who live along the barren and stormy coasts of northern Norway and Finmark :

“The women too are apt at seamanship, and the boats and nets are often served entirely by the wives, sisters and daughters of their owners, or even by women hired specially for the purpose. The features and general appearance of these women become so weather-beaten from



constant exposure to the elements that it is as difficult to distinguish them from the men as it is to tell the girls from the boys."

### 3. DARWINISM AND THE EVOLUTION OF BEAUTY IN WOMEN

How selection has been said to influence feminine beauty we can see from the opinion of Charles Darwin, who expresses himself as follows :

"As women have long been selected for beauty, it is not surprising that some of their successive variations should have been transmitted exclusively to the same sex ; consequently that they should have transmitted beauty in a somewhat higher degree to their female than to their male offspring, and thus have become more beautiful, according to general opinion, than men. Women, however, certainly transmit most of their characters, including some beauty, to their offspring of both sexes ; so that the continued preference by the men of each race for the more attractive women, according to their standard of taste, will have tended to modify in the same manner all the individuals of both sexes belonging to the race."

It has been argued that the men of primitive communities often choose their partners less for appearance than for strictly utilitarian considerations : nevertheless, there are certainly some races and tribes among whom there is a certain amount of preferential mating. And there is also some degree of reciprocal selection on the part of the women, who reject and evade those suitors who do not please them. Cases have been cited from among the Abipones, formerly living in Paraguay, among whom the girl can frustrate the elaborate bargains between parents and her suitor by running away or refusing her consent (*cf.* Westermarck,<sup>1</sup> II., 318). Gregg reported that among the Comanche, the girl signified her consent by leading her suitor's pony to the shed. Among the Siberian Kalmuck and several Malayan tribes the consent of the bride's parents is first obtained, but is followed by a race between the girl and the youth,\* and Bourien has testified that girls have never been known to be captured by wooers for whom they had not already felt some preference.

The Battak (who inhabit the interior of Sumatra) often show great spirit in repelling unwelcome marriage ties.

The missionary Simoneit says :

"If a betrothed girl resolutely refuses her suitor, it becomes the duty of her parents to compel her. The first stage of force is a kind of stocks, and the second torture by ant bites while in the stocks, for a whole nest of these insects is poured over her. If she persists, her hair is shorn. If she, nevertheless, persists, her father is no longer liable, but, if the father should refuse to torment his recalcitrant daughter, he must repay the bride-price at double rate. It is seldom necessary to proceed to the extremes of punishment, but there are cases in which the disappointed bridegroom declares : 'It would shame me to return her to her parents : I will make a covering for my head from her hair and grind her bones for mortar. I will not release her, but I will wed another.' And, in that case, the girl may never marry anyone if the man persists in his determination."

Among certain of the South African tribes the girls are bought from their fathers, but the wooer presents himself before them and goes through his paces, so to speak. Among the Ama-Xosa, however, if the girl refuses the bridegroom whom her parents prefer there is a drastic ceremonial for, when his emissaries come to fetch her from her father's kraal, she smears her body with human dung instead of the festive ochre, and this nullifies the contract (Kropf). Burchell reports that

\* *Cf.* the Classic myth of Atalanta and Meilanion, and the Nordic, of Brynhild and Sigurd.



among the Bushmen it is obligatory for the wooer to receive the girl's consent as well as her parents' when she reaches middle age. Winwood Reade speaks highly of the African negro girls among those more intelligent tribes who are still pagan : he says that they have no difficulty in choosing the mates they prefer, and are fully capable of the sustained and complex emotion to which civilisation accords the name of love, for they are devotedly faithful, tender and passionate. So we must conclude that the women of some primitive peoples at least are by no means so subordinated and oppressed in their choice of a marriage partner as is often supposed.

Charles Darwin concludes that :

"Preference on the part of the women, steadily acting in any one direction, would ultimately affect the character of the tribe ; for the women would generally choose not merely the handsomest men, according to their standard of taste, but those who were at the same time best able to defend and support them."

Moreover, the more vigorous men would seek and obtain the more attractive women.

We know little of the process of heredity in our own species. Practical tests are generally impossible on the lines of animal-breeding, and we are obliged to fall back on the study of certain families and stocks. Goldschmidt says :

"Among human communities, we have cases of the most intricate cross-breeding ; individuals consist of all possible combinations of genetic factors. And such is the multiplicity of special qualities and aptitudes that two homozygotes cannot often combine as parents of a new life. So every reproductive product is really, to some degree, a hybrid. . . . If we wish to analyse this intricate material (individual and racial), we must first decide which characteristics are modifications, that is, variations due to environment and hence not hereditary, and which are due to genes, *i.e.*, hereditary factors. In practice, this distinction is of the greatest significance and we cannot have too much illustrative material. For a modification dies with its carrier, or with the cessation of the environmental conditions which called it forth. Thus, harmful modifications do not call for extirpation but for changed conditions, *i.e.*, their cure is generally political, economic or cultural. And, on the other hand, desirable modifications cannot be preserved for the race by selective mating, but must ever be attained anew with each generation. Genetic qualities, on the other hand, cannot be obliterated or bestowed by any environment. Their development and preservation are, therefore, purely hereditary, that is, biological and depend on combinations of genes. Eugenics, the science which aims at improving the human stock must, therefore, be based on the most exact knowledge of these factors, and their investigation is the task immediately before eugenicists."

#### 4. THE FAVOURABLE INFLUENCE OF RACIAL MIXTURE ON BEAUTY IN WOMEN

The most pronounced and extreme examples of racial and ethnical types are the result of marriages within the same race and class. These are specially noticeable among the *Hindus*, especially the high caste Hindus who only marry within their own caste, and have done so for centuries, following the Laws of Manu. Gobineau and Meiners praise the personal beauty and distinction of the Brahmin caste. But they, too, are not free from admixture of race, and there are great possibilities in some racial blends. According to Pruner, in the children of an Arab father and a Negress there is more resemblance to the maternal type. But if a Negro mates with an Egyptian woman the children have woolly hair, but are otherwise Egyptian type and the third generation has straight hair and merges completely



into the Fellahin. European and Turkish fathers and Abyssinian mothers produce children who might be taken for Spaniards or Portuguese in their appearance, but seem to lack a certain facial expression.

Van der Burg and Beyfuss, who "agrees with his observations on all points," say that "the children of Chinese fathers and Javanese mothers are of decidedly Mongolian type, and resemble their fathers in habits and ways of thought and action as well, particularly in their business aptitudes."

The Javanese-European blend produces a conspicuously pretty half-caste, for it modifies the partly *retroussé* nose, the width of the smiling mouth and the peculiar slit of the narrow eyes. Schmarda praises the attractiveness of the half-caste Euro-Malayan woman. And there are extremely pretty women among the half-castes of European and Japanese parentage (*cf.* Fig. 127).

Berghaus praises the mulatto women of South America in comparison with the indolent, apathetic Brazilian women. He says they have a delicate and slender build, their arms are relatively short, their hands charmingly dainty, their breasts beautifully curved and firm, and their feet tiny and like their hands; they are incomparably more attractive than the white women, being full of gaiety and animation as well as grace of form.

Richard Neuhauss has recorded the case of a Kanaka woman from Hawaii who had children by several fathers of different races. One of these fathers was a full-blood Polynesian from Hawaii, one a Chinaman, and the third a Melanesian. The Chinese half-caste child had narrow eyes and salient cheek bones; the third, spirally twisted curls and a noticeably large white area in the eyeball.

In Honolulu, Neuhauss saw two half-castes by the same father, a German, who had only very slight traces of their Polynesian descent. In fact, these male half-castes seem to have resembled their fathers, but the result was quite different in some half-caste girls whose mother was a Kanaka, while their father was a Norwegian with blue eyes and light hair. The two daughters had dark skins and typical native features, thick noses, dark eyes and hair and stout heavy figures. According to Riedel<sup>1</sup> the children of Chinese fathers and Aru (Aroe) Islanders show differences in pigmentation, according to sex, the boys being darker-skinned than the girls.

Finsch found some beautiful girls among the Maori-European half-castes of New Zealand; but none who could be termed beautiful among the full-blooded aborigines.

In Micronesia the half-castes of mixed European and Gilbert Islander parentage



FIG. 127.—Half-breed girl: Japanese mother and European father. (After A. Friedenthal.)



are easily distinguished from the Micronesians of full blood by their lighter colouring, soft, red lips and an expression which reminds the observer of the European.



FIG. 128.—Half-caste. Father, Scot; mother, Hawaiian. (Anthrop. Ges., Berlin.)

The children of Europeans and Ponapé women from the Caroline Islands cannot be told apart from European girls, we are told, except by a slightly more swarthy complexion; and another crossing with the white race makes its offspring indistinguishable from full-blood Europeans in features or colouring. The same is said of the Samoan-European half-castes. Finsch<sup>2</sup> speaks of a two-year-old girl, the daughter of a white father and a woman from New Guinea, who was like a deeply sun-bronzed European baby with delicate red lips, intensely dark eyes and curly fair hair.

Nordenskiöld<sup>2</sup> is another witness to the attraction of the half-caste in another region, namely, Greenland. He says:

“The women were neatly and carefully arrayed, and some half-caste girls with brown eyes and healthy, chubby, almost European features, were rather pretty.”

The illustration 129 shows a family of Greenland Eskimos with a European father. In the top row are the father and the Eskimo mother, between them their young son, and seated, the two daughters. N. A. E. Nordenskiöld's description applies perfectly to these girls.

In the North-West of America there are people of mixed blood often termed Bois-Brulés, the descendants of French trappers and explorers and the Indians of various stocks. The women of this half-breed race are, as a rule, whiter in colouring than the men and appear pale in comparison. Many of these *métis* have skins as delicate and white as European women, and regular, chiselled features, there being some truly classically lovely girls among them. A Mexican half-breed is depicted in Fig. 130.

The main racial mixture in Chile, between Spaniards and the natives, is also

favourable to looks according to Treutler. These Spanish-Indian women and girls have, as a rule, a clear, pale complexion, black hair, abundant and rather coarse in texture, very brilliant and expressive eyes, aquiline noses, narrow, thinly pencilled, but distinct, black eyebrows, which form perfect arches, very long silky lashes,



magnificent teeth, very small ears, hands and feet, finely formed breasts, and much grace of movement. There are even some blue-eyed blondes among them.

In Peru the European-Indian half breeds are termed Cholos and are much comelier than the unmixed natives (Fig. 131).



FIG. 129.—Eskimo half-breeds. In the front row are two girls; behind them the European father and Eskimo mother with their son between them. (Photo, Herrnhuter Missionsges., Greenland.)

Steller writes as follows of the Kamchadale

“ Among the broad-faced women, there are beauties equal to the most admired Chinese womankind. But the daughters of Cossacks from Russia and native mothers are so comely that their beauty may well claim perfection. Their faces are commonly long and oval, and the blackness of their hair, eyes and brows, the whiteness, smoothness and delicacy of their skins, and the rosy pink of their cheeks give them a special charm. And they are notably ambitious, cunning and secret in their ways: know how to keep silent and much given to the pleasures of love.



Thus, they captivate even such men as have kept free from illicit dalliance all the way from Moscow till they reached their country."

A careful and detailed comparison of the results of various racial mixtures would be of considerable anthropological interest. Beauty is often increased or produced by ethnical blends, but is not always their result. What are the circumstances and conditions which decide this factor? When and why is the paternal type dominant, and when and why the maternal? Exact knowledge on these points might assist us to judge which stocks are the survivors and which are not.



FIG. 130.—Mexican mestiza. (Photo, C. B. Waite.)

There may be degeneracy due to unsuitable racial mixtures. For Schliephake gives this account of the Eskimo who dwell near Cumberland Sound, although an isolated case proves but little :

"The smallest individuals by far that ever I saw were half-breeds. They were brother and sister, offspring of the concubinage of the mate of a whaler and an Eskimo woman. The father had been in these parts 20 years before and was of Portuguese origin."

Nevertheless, we have a substantial amount of material in support of the view that racial admixtures increase comeliness and attraction in women at least. Of course, this physical improvement and attraction may be not absolute but relative and subjective; it may be an illusion of the white man because half-caste woman naturally approximates more to his own racial type. But there are two arguments against this view. N. A. E. Nordenskiöld states that the Eskimo are now learning to regard their own type as less attractive and desirable; and Kropf says that the Ama-Xosa prefer the lighter skins and straighter features of the daughters of women of their own race by white fathers,

and that such girls are much sought after. The same is reported in Southern India.

The most trivial details of physique and appearance in persons of mixed race may be of high anthropological significance; and any accurate information on the subject must be recorded and taken into consideration. Bartels was quite right on this point, but there has been very little reliable and genuine testimony so far. This was shown in the course of the discussion at the Anthropological Congress at Nürnberg in 1913, where the speakers nearly all voiced the standard of German colonists. But, of course, comparative physiology and æsthetics cannot be settled from the point of view of any one nation or any one group of individuals.



### 5. PHYSIOLOGICAL DEGENERATION IN WOMEN

If a people, after having enjoyed a high degree of culture and prosperity, sinks to a lower level, both mentally and materially, this degeneration is plainly registered in the manners, habits and appearance of its women. Let us cite only one example



FIG. 131.—Cholo girl : Peru, River Marañon. (Photo, G. Hübner.)

from the many which history records. In antiquity Cyprus was a centre of civilisation. The famous shrines of Aphrodite, the Goddess of Love, brought women from all Mediterranean lands to worship and to pray for what they most desired. Excavations have recently brought to light evidence of much prosperity and a comparatively high degree of culture ; and the women of Cyprus must have shared



in these good things both material and mental. What is the case to-day ? The main portion of the island, the fertility of which was once so renowned, has been laid waste ; many of its inhabitants are steeped in ignorance and poverty. Samuel White Baker has depicted the apathy and misery of the women of Cyprus in 1879. He describes the crowd of women and children who surrounded him and his travelling companions on February 4th, when the temperature was too low to pitch a camp (43 degrees) :

“ They indulged their curiosity, shivering in light clothes of home-made cotton-stuffs. The children were generally pretty, and some of the younger women were good looking ; but there was a total neglect of physical appearance, which is a striking characteristic of the Cypriote females. In most countries, whether savage or civilised, the women yield to a natural instinct, and to a certain extent adorn their persons and endeavour to render themselves attractive ; but in Cyprus there is a distressing absence of the wholesome vanity that should induce attention to dress and cleanliness. The inelegance of their costume gives an unpleasant peculiarity to their figures—the whole crowd of girls and women looked as though they were about to become mothers.”

Baker gives further details and confirms the impression that we have here (*cf.* also B. Stewart, writing about 1905) of the representatives of deterioration, sexual, racial and social. Degeneration in a people produces slatternly and over-worked women without enough natural vitality to care for their appearance, and the incessant hard work will tend to obliterate what is characteristically feminine in mind and physique.

There are striking examples in certain country districts of Germany, *e.g.*, in the Upper Palatinate, showing the influence of occupation on appearance, bony structure, and even vocal pitch, as Riehl has so trenchantly remarked in his “ *Naturgeschichte des Volkes*.” Nevertheless, in this same Upper Palatinate, Brenner-Schäffer found the most exquisite faces with delicate features and expressive eyes among the little children, but he admits : “ They were unspoiled raw material ; their development, the realisation of their possibilities is unfortunately very inadequate. The girls are pretty in their first bloom of youth, then they grow coarser and heavier, and, after a few confinements, they appear middle-aged matrons.”

Goldschmidt found that in the North-west of Germany, freshness and comeliness rarely survived childhood among the poorer classes :

Heavy work with immature bodies makes them lank and skinny, draws wrinkles round eyes and mouth and makes the movements awkward and clumsy. He had often thought that a mother who showed him her child was the grandmother.

A practised observer, he continues, can tell the status of any man or woman among our country population, for ease and agility of movement and good carriage show that their early years were not burdened by excessive toil.

Even the structure of the skeleton is affected by certain environmental conditions, and characteristic sexual differences are almost obliterated. G. Fritsch, for example, considers that shoulders and pelvis, absolutely and relatively, are less typically masculine and feminine respectively among the South African tribes than with Europeans ; the pelvis especially is neither, but tends more to the male type.

Finally, we must not overlook the abnormally early physical decline of primitive women owing to underfeeding and poor living conditions. Reichard thus describes the pitiful effects on women among the Wanyamwezi (Lake Tanganyika) :

“ The wife and mother ages at 25 or even 20, as a result of the burden of work, and is transformed ; her features are deformed and wrinkled, her breasts become slack like pendulous



bags and hang almost to her waist ; the abdomen is either enormously fat or hollow, and the buttocks are very prominent. The arms are extremely thick and muscular as a result of constant grinding of corn."

Vortisch <sup>2</sup> gives similar descriptions of the negresses of the Gold Coast ; and Müller <sup>6</sup> of the Australian black women.

In fact, the more degraded and unfortunate her social and material position, the earlier the advent of old age in woman. This rule holds good throughout the world.

## 6. THE GEOGRAPHICAL AND ETHNICAL DISTRIBUTION OF BEAUTY IN WOMEN

There can be, clearly, no absolute and final judgment in the matter of personal beauty.\* But Europeans may, nevertheless, be permitted to compare the appearance of members of other races with the æsthetic ideal which has been built up among their own people throughout centuries of civilisation.

Undoubtedly the Mongolian type does not attract the white race at first, either in the men or the women of Eastern Asia. We do not instinctively admire the flat, wide faces with their disproportionate breadth at temples and cheeks ; the small, obliquely set eyes, the thin straight eyebrows, the salient cheekbones, the broad flat root of the nose and its rounded tip, the short chin, projecting ears and unrelieved sallow colouring of the skin. And yet there are women of Mongolian race, especially among the Japanese, who though not strictly beautiful according to European standards, can certainly be called extremely pretty. The secluded, indoor life of the women of Eastern Asia in all but the poorest classes gives their skins a pale, unwholesome look. And, to the European eye, the sexes resemble one another closely among the peoples of the Far East ; an impression due to the slight growth of beard among the men and the peculiarly wide, loose clothing worn by both sexes.

What shall be said of the extreme type of Negro physiognomy from the point of view of European æsthetics ? We find very little comeliness in the black—or at least dark-skinned—faces with the big-boned faces and the prognathous jaws, the thick, everted lips, open nostrils, woolly hair, bull necks, thin calves and large flat feet. But this extreme type is not the only one throughout Africa. The missionary Kölle, who knew his flock well, has said : "The typical Negro physiognomy, as described and depicted in our books, would be dismissed by negroes themselves as a caricature, or at the most an inferior approximation to reality." Many observant travellers and anthropologists praise the slender bodies of the young girls in their brief bloom as undoubtedly charming. Even the Hottentot women, who appear to us grotesquely hideous in mature age, have very small and delicate extremities and slim, delicate bodies when they are young, according to Barrow. He says that some might serve as models of perfection, with their round firm breasts and large erect nipples.

Where is the native land of beauty as the modern European understands it ? Beauty which is independent of artifice. It has been said that there is a zone of the earth's surface running roughly from East to West which does produce the loveliest women and that it is a matter of personal preference which region or race in that favoured zone is awarded the prize. The countries in question include Persia and the Caucasus, especially Georgia and Circassia, European Turkey, Italy, the northern

\* [Cf. G. Lynch.]



part of Spain, France, England, Germany, Poland, Denmark, Sweden and some parts of Norway and Russia. But we all know that in some of these countries the average level of looks is very humble indeed and that close approximations to the æsthetic ideal are rare and incomplete if reckoned in percentages of the total female population.

There is so much difference in the judgment and taste of individuals that we will only cite a few acknowledged authorities on æsthetics. Winckelmann declared that radiant and perfect beauty was, so to speak, indigenous to Rome and its surroundings and attributed it to the soft Italian climate. He emphasised the comparative rarity of the unfinished-looking, flat, crude or insignificant features so often seen north of the Alps; the lineaments were finely proportioned and delicately chiselled, and the whole cast of countenance either statuesque or expressive. Winckelmann even declared that the poorest men of the people in these favoured regions had heads suitable as models for works of classic art; and that the country women in the most remote villages often reminded him of Juno herself. But we shall see that not all observers agree in this matter!

In the beauty competition organised in 1888 at Spa, there were 19 prizes distributed among a very numerous crowd of applicants. These 19 prizes went to women and girls from eight countries; one to the United States of America, three to Belgians, six to France, one to Italy, three to Vienna (Austria), three to Prussia (Berlin two, Posen one), one to Sweden and one to Hungary. The first three prizes were awarded to the American girl, a Belgian and a Viennese, respectively.

[Annual beauty competitions are now constantly held in various parts of the world. The Twelfth Annual International Beauty Contest was held at Galveston, Texas, in 1931. The Belgian, Mlle. Metta du Château, was awarded the title, having defeated the U.S. entrant in the final ballot. In 1932 the prize went to Turkey, "Miss America" receiving special commendation for the general form of her legs. These competitions, however, are of little service to the anthropologist, since the clothing worn by the participants effectually prevents the whole body from receiving attention. As giving a general idea of the rough prevailing standard among the white race they are useful. Thus in the 1931 competition nearly all the entrants were slim, "Miss Belgium" herself being a short brunette with a small head, slim body with well proportioned hips and rather long arms.]

## 7. BEAUTY IN EUROPE

In the following pages there is a brief sketch of the characteristic appearance and attractions of the women of various races throughout the world. All such opinions and judgments are clearly subjective and thus dependent on individual taste and prevailing fashion.

Almost all travellers in Italy praise the dark eyes of the Italian girls and women and the magnificently proportioned figures and majestic carriage of the Roman women par excellence. But a closer and longer observation tends to cool down the enthusiasm of first impressions. Indeed, Bogumil Goltz compares these first impressions to the illusions of the Fata Morgana; he refers specially to the mental capacities and activities of the Italian women, but what he says applies equally to their physical attractions.

On the Island of Sicily Ploss found attractive faces and comely figures to be very rare among the women, while the men are often very good-looking. Hehn's remark about the scourge



of hunger and the comparative freedom of the Sicilians from its menace and from the trials of the northern winter can only be taken as affecting the men of Sicily and Southern Italy, where they live in the open air and pile all their burdens on the heads of their wives or the backs of their hapless donkeys.

The Spanish women are famous for their looks. Bogumil Goltz says that their appearance



FIG. 132A.—Two English girls. (Dover Street Studios..)

expresses their temperament : he praises “ their beautifully moulded figures, their grace and dignity of movement, their resonant voices, the dark brilliance of their eyes and the vivacity of their gestures. Their physical development is precocious and their maturity brief, the effect jointly of climate, dirt and sensual pleasure.” \* The Italian, E. de Amicis, declares that an

\* Cf. Havelock Ellis’s “ The Soul of Spain ” for a very subtle and appreciative study of the Spanish woman.



Ardalusian is the most likely of all women in the world to suggest and tempt men to abduct her by her mere appearance and manner.

The Portuguese woman has a distinct physical personality which differs from the Spanish in many respects. She is quieter, more serene and reserved, less addicted to the dance and all



FIG. 132B.—Blonde European. (Photo, R. A. Giesecke.)

public festivities. Schweiger Lerchenfeld compares her to a precious but faded work of art, with an aura about her of centuries of memories. The sensual vitality of the Spaniard is lacking in her.

In modern Greece, feminine beauty is very rare ; so rare, according to Adolph Bötticher, that the sight of it is amazing whenever it occurs in the interior of the country at least. "The Greek girl matures very rapidly and often bears her first child by the time she is 13 or 14.



She nurses her children till they are five or six years of age and generally more than one at a time. And so she ages rapidly and the hard work in the harvest field and at the loom combine to coarsen her features and break the elasticity and uprightness of her carriage : a contrast to the ease and royal dignity with which the Greek men, even the poorest peasants, hold themselves and move." Bartholdy confirms this description. "They have often finely formed breasts



FIG. 133.—Blonde European : urban dweller. (Photo, R. A. Giesecke.)

which are soon deformed and relaxed and the whole figure becomes corpulent. Their distinctive attractions are the graceful outline and carriage of head and neck. The women of Athens have been noted for centuries as inferior to all their countrywomen in looks, even to the Albanian women"—although the latter are much less handsome than their men. In the mountain districts, they are raw-boned and hard-featured ; in Southern Albania, the Grecian type appears occasionally, but without its beauty : the faces are almost all plain, according to Schweiger-Lerchenfeld.



The women of Malta are not Italians, nor do they resemble the Greeks. There is something Arabian about their oval faces, sharply cut aquiline noses, and glowing eyes under thick lashes. They are tall and slender and their complexions dark.

Franzos has praised the Roumanian women of all classes : he describes them as very pretty with graceful, rounded supple figures, brown skins, black eyes and hair. Kanitz has less



FIG. 134.—European brunette ; urban dweller. (Photo, R. A. Giesecke.)

appreciation of the Bulgarians, whom he describes as high-coloured, fresh-complexioned but ageing rapidly.

The Serbian women have the reputation of comeliness. Franz Scherer, for instance, says : "Nature has favoured Serbia both in its landscapes and, as no one will be inclined to doubt, in its womenfolk as well. Very fine looking women are often seen in the Serbian towns, with features of classic regularity and often of really surprising beauty. Their dark eyes and hair and pale but lustrous skins set off their beauty of line and ensemble, when framed in the supple and splendid national costume they make a perfect picture."

The Serbians (or Croatians) of the former military frontier (between Old Serbia and Austria) are described in detail by Baron Rajacsich, who found them very different from the feminine population of Syrmia and Banat. They had more powerful, thick-set muscular figures, with greater development of breast, hips and calves, and denser hair, particularly thicker eyebrows



than the dwellers in the vast plains. There is something of the Greek type in Serbian women's faces : since Greeks mixed with southern Slavs in the Balkan peninsula.

In Montenegro, according to Bernhard Schwarz, the women are graceful in their girlhood, though much shorter in stature than the men, but they age very soon, becoming raw-boned and wrinkled, for they are the general beasts of burden, carrying incredible loads along mountain paths while their hands, horny with toil, knit incessantly.

The Turkish (Osmanli) women are, it is said, of less mixed blood than the harem ladies of Constantinople. They are, as a rule, plain rather than pretty and with very large mouths and straight, rather large noses. But they have luxuriant hair and fine eyes, more often dark than blue (Didaskalia, 1877). De Amicis has described the Turkish women of Constantinople, who are, of course, of very mixed blood, as follows : Generally fat and, as a rule, of short stature with



FIG. 135.—Dark European : urban dweller. (Photo, R. A. Giesecke.)

very white skins, under a layer of cosmetics, black eyes, soft red lips, oval faces, small noses, round chins and rather full lips. Their necks are long and supple and their feet dainty and small.

Polish women are amongst the most admired racial types of Europe and the world. Schweiger-Lerchenfeld says : "They really have something almost dazzling about them, for their features are almost classical in their regularity. They are much more graceful than the Russians and show better taste in their dress and general appearance. Moreover, they are also, as a rule, of quite different and more delicate build and their skin colour seems more transparent and finer. Their dark eyes are full of vivacity without the melting, liquid, almost sensuous blue of the eyes of the Northern Russian. The Polish lady is full of beauty and distinction and has a grace which is only approached by the women of Mediterranean lands."

The same author finds a great diversity of opinion as regards feminine beauty in Russia. There is great variety of type. The Ukrainian is of much warmer and livelier temperament than her blue-eyed sister of the north and her physiognomy and colouring are much more southern. She tends to be taller and slighter than the North Russian, her eyes are dark and full of expres-



sion, her black hair is bound round with a becoming snood or fillet. There is a resemblance to the Polish type in her slenderness and grace of build. The Central Russian girl is shorter, but her bones are much bigger and more solid and her figure tends to be plump. The eyes are light coloured, the glance direct and friendly, full of gaiety, but without the intensity of the south. The hair, ashen or flaxen in its fairness, is typical of the north."

The loveliest Swedish women are those from Dalecarlia. Du Chaillu compares the finest Swedish complexions to "apple blossoms floating in milk"; he praises the delicacy of colouring and skin texture as beyond compare. The Swedes alone, he declares, are able to pride them-



FIG. 136.—European brunette : urban dweller. (Photo, R. A. Giesecke )

selves on possessing cheeks of the particular rosy tint which seems in a sense to be absorbed by the skin and gives them an indefinable charm.

Southern Germany has many samples of the brunette type. Ranke<sup>1</sup> describes the typical pretty girl of Upper Bavaria as slightly tanned and often black-haired, with a slender muscular figure and deep brown laughing eyes, full of spirit and vivacity. The same direct, decided, vivacious type is to be observed in blonde and blue-eyed girls from the Bavarian Highlands. Figs. 132–136 show a few examples of European beauty.

## 8. BEAUTY IN ASIATIC TYPES \*

According to our standards, the racial group to which the Ostiak, the Samoyed, the Koryak and the Kamchadale belong is not beautiful, and travellers from Europe almost all mention the unattractiveness of their womenfolk; "devoid of grace and so like the men that they can hardly be told apart when dressed and at first sight. Their skins are usually sallow and their

\* [Cf. E. M. Bowden.]



stature low." N. A. E. Nordenskiöld says that some of the younger girls among the Chukchees were rather pleasant looking—but surrounded with an atmosphere of dirt and fish-oil. The Votyak (Finno-Ugrian) women are short and plain with reddish hair, according to Gmelin and Pallas, and the latter authority found few pretty women among the Mordvins in Russia. The Kalmuck women were more attractive, and Kollmann mentions a Kalmuck beauty, the mother of three children, who was a member of a group exhibited in Basle. His description of her is as



FIG. 137.—Tatar woman from Baku. (From the Ordén Coll., Vienna.)

follows : "Taller than the others, slender yet strong. Small hands and delicate bony structure, a thin nose with a slightly curved bridge which relieves the width and flatness of the face, the eyes are widely open, the epicanthic fold very slight. She has long lashes and thin eyelids unlike those of her Kalmuck and Samoyed relations. The whole physiognomy reminds one of many men and women from Southern Hungary."

Ermann says of the Yakuts : "The women are often very well built with regular features, black sparkling eyes and much animation, but they lose their looks very soon."

Among the Siberian Tatars "the women's faces," according to Vambéry, "are notably



regular and sometimes pleasant. Their skin is much whiter than the men's, their hair long and very dark; their bodies are softly rounded with well-made hands and feet. They carry their shoulders well, but protrude the abdomen and are disfigured by the characteristic salience of their cheek bones and the inflamed eyes, reddened by smoke-filled rooms and tents."

Burnes says the Turkoman women are blonde and often pretty. Fraser says that Goklen



FIG. 138.—Kurd. (After Schweiger-Lerchenfeld.)

women "are sometimes sallow and ugly, and others younger and very pretty with warm, nut-brown and ruddy tones in their complexions, regular features, pleasant and intelligent expressions and piercing black eyes."

Among the Afghan people, the men are famed for their magnificent appearance and physique, but the women are insignificant in comparison.

The women living on the Yarkand Daria are generally pretty with fresh, pleasant faces and small, shapely feet.





FIG. 139.—Dusun (Borneo) woman and child.



Polak describes the Persian women as of medium height and neither thin nor stout. They have large, well-opened, almond-shaped eyes, languorous and sensuous, and finely arched eyebrows meeting over the root of the nose. The shape of a Persian woman's face is highly praised if it is round rather than oval; the poets of Persia celebrate her as the lady with face like the moon. She has exquisitely shaped feet and hands, broad lips and bosom; and a skin more olive than fair. Her hair grows very thickly and is generally of a dark chestnut tint. Artificial aids to beauty are much in use; the face is painted and eyebrows blackened. In carriage and movement the Persian is elegant, easy and agile.

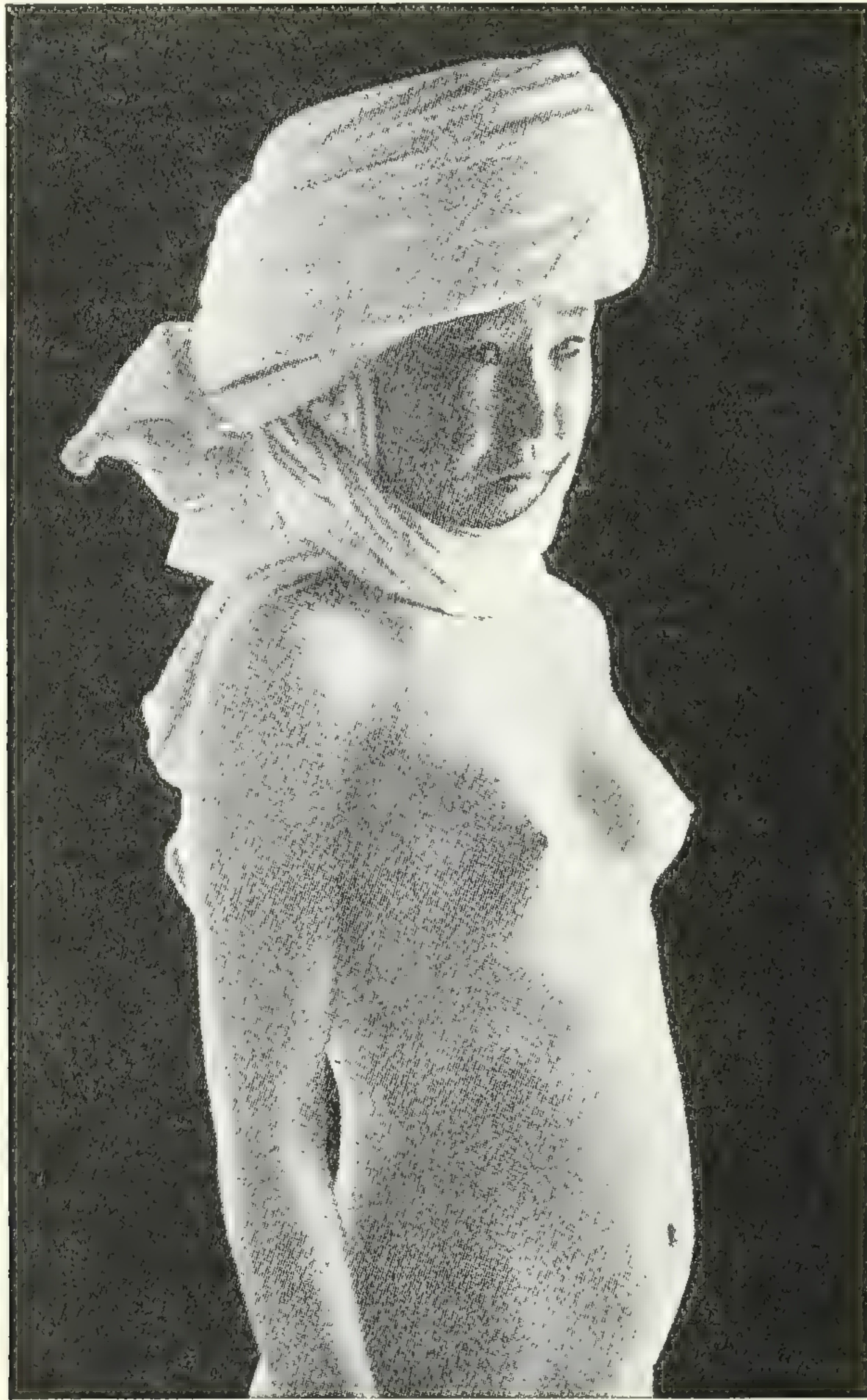


FIG. 140.—A "Kirghiz" woman of 33. (Photo, E. Ganz.)

Crousse attributes "a robust, full-blown vigorous beauty, as becomes a powerful race" to the Armenian women. E. de Amicis mentions their "full and fine proportions, corpulence, white skins, aquiline profiles and large long-lashed eyes; their faces," he adds, "have not the intellectual look of the Greek women." Another author again mentions the frequency of fine figures among them and their regular features, oval faces, bright black eyes and dense black hair.

Certain regions of the Caucasus have been for centuries reputed the Eldorado of women's beauty. They supplied the most highly-priced and highly-praised slaves to the harems of Turkey, Egypt and North Africa. The Mingrelian, Circassian and Georgian women had the reputation of the greatest delicacy of complexions and symmetry of feature and the most magnificently developed figures. The French traveller Chardin visited the Caucasus in the nineteenth century and praised the height, grace and perfect proportions of the Georgian



women, their walk being particularly easy and agile. The Circassians he also considered very beautiful, with high foreheads, black pencilled eyebrows, lustrous eyes, finely shaped nose and rosy, laughing mouth showing beautiful teeth: the chin well rounding off the perfect oval of the face. And he concludes: "In Mingrelia there are wonderfully lovely and majestic women, with splendid figures and classical faces, and eyes that captivate all whom they behold."



FIG. 141.—Siamese women. (Photo, O. Häckel.)

Pallas and other writers confirm this account; but find that Circassian women, though attractive and handsome, are below their dazzling reputations. They have very white skins and good figures, but comparatively short lower limbs. They cultivate their slenderness—which is greatly admired, although, as a rule, the Near East prefers very plump women—by means of special diet of milk and constricting girdles, like corsets. Bodenstedt found "only four who were really beautiful, as we understand beauty in women. But all were very slender with small



ears, hands and feet. Dark eyes and black hair are no more frequent among them than at home: the majority have fair or light brown hair and blue or hazel eyes."

Mantegazza<sup>1</sup> has praised the beauty of the Hindu women and their tenderly emotional and passionate nature. They generally have some attractions, such as great dark, luminous eyes, thick brows and lashes, the shoulders, arms and bosom of a Greek statue, and little feet, free from the deformity of tight shoes and displayed to advantage by anklets.\* But they have sallow, colourless skins, weak, slender legs, and teeth blackened by chewing betelnut.



FIG. 142.—Burmese woman. (Anthrop. Ges., Berlin.)

Among the many diverse races of the Indian peninsula is one, the Nayar (of Southern India), who practise a form of group marriage, amounting to almost free sexual relations, and these customs, which have prevailed among the Nayar for centuries, have not injured either their fertility or their physique in general. Jagor<sup>1</sup> claims that it has had a selective influence which is far from deleterious, and described the Nayar women as extremely dainty, strictly clean in their habits and persons, of very graceful and seductive appearance, and, in spite of the intense

\* [The clothing of Hindu women, with its lack of restraining influences, enhances their beauty, as Rothfeld has pointed out and illustrated in his book on the women of India.]



heat of the climate in which they live, their skin is much whiter than that of most Indians. Jagor points out that in Sparta there was a eugenic selection in procreation which produced a stock superior in masculine vigour and courage and feminine beauty to all other Greek peoples.

Among the women of the Igorrote on the Philippine Islands there are features as delicately cut, and skins as white as any pretty European girls, according to Hans Meyer.

Finsch states that in Malaya he saw many pretty figures with well-shaped breasts. Stratz



FIG. 143.—Javanese water-carrier. (Anthrop. Ges., Berlin.)

gives greater detail in describing the Javanese: "The typical features of the women of Java are an abundance of straight, glossy, deep black hair; dark eyes, dazzlingly white teeth and a dainty slender build with graceful, rhythmically swaying gait. Their complexions show a great variety of pigmentation, from the palest sallow olive tint to the deepest purplish bronze. Their black hair has sometimes a faint reddish tinge in certain lights; but girls with dark red-brown hair are very rare and there are no blondes among them. Their lower limbs are proportionately short and slender, and the upper thigh much less rounded than in European women. Shapely legs and calves are rarities among the Javanese."

The pure-blooded Malayan types in Java are often beautifully shaped and, although their



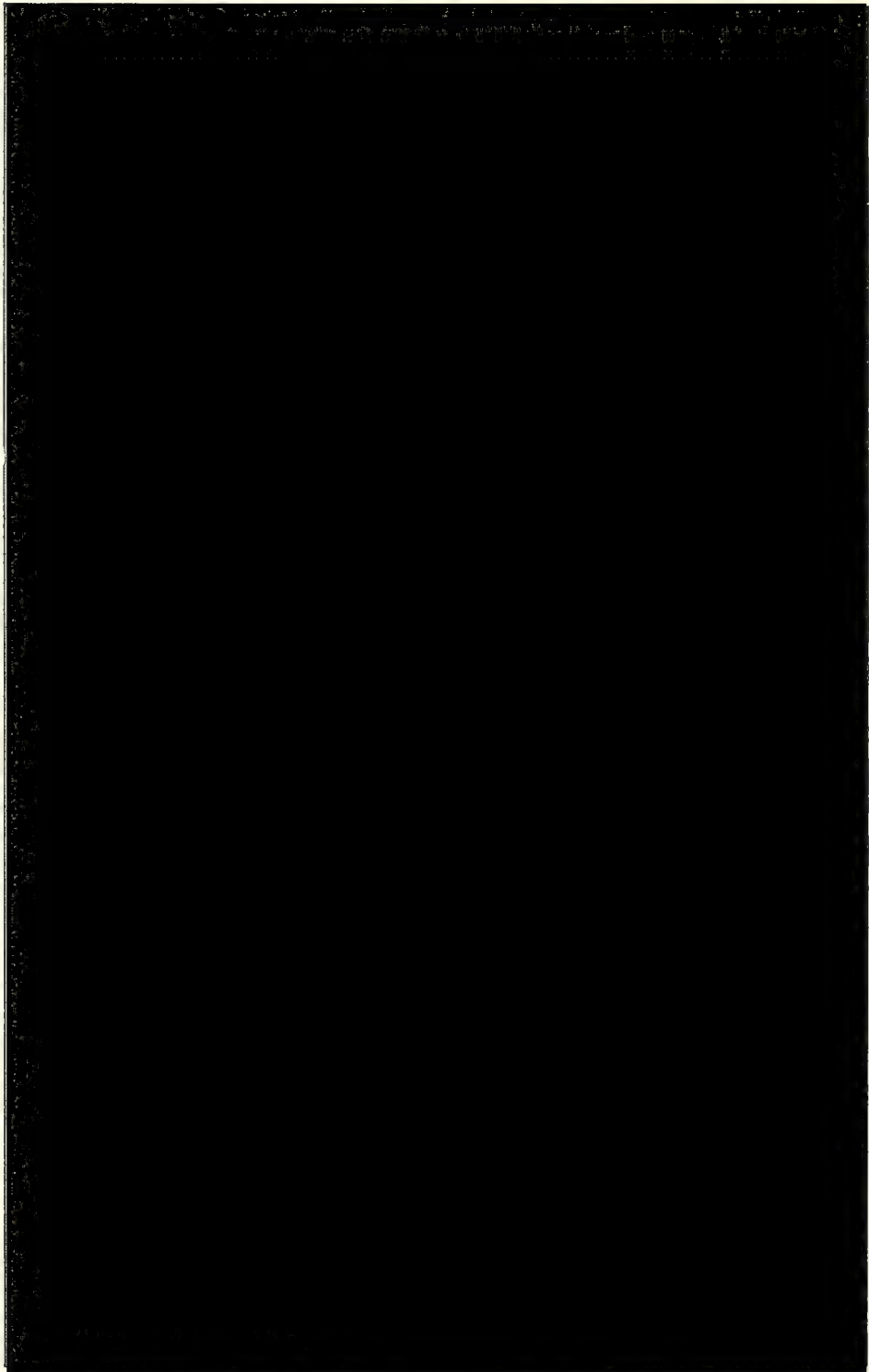


FIG. 144.—Singalese. The breasts show convex areolæ. (Photo, Prof. Ehrenreich.)

faces are not beautiful in our sense of the term, there is something very graceful and agreeable in their appearance. The same is true of the Dyak women in the forests of Borneo, who, according to photographs, exhibit figures that are often extremely graceful and their faces pleasant.



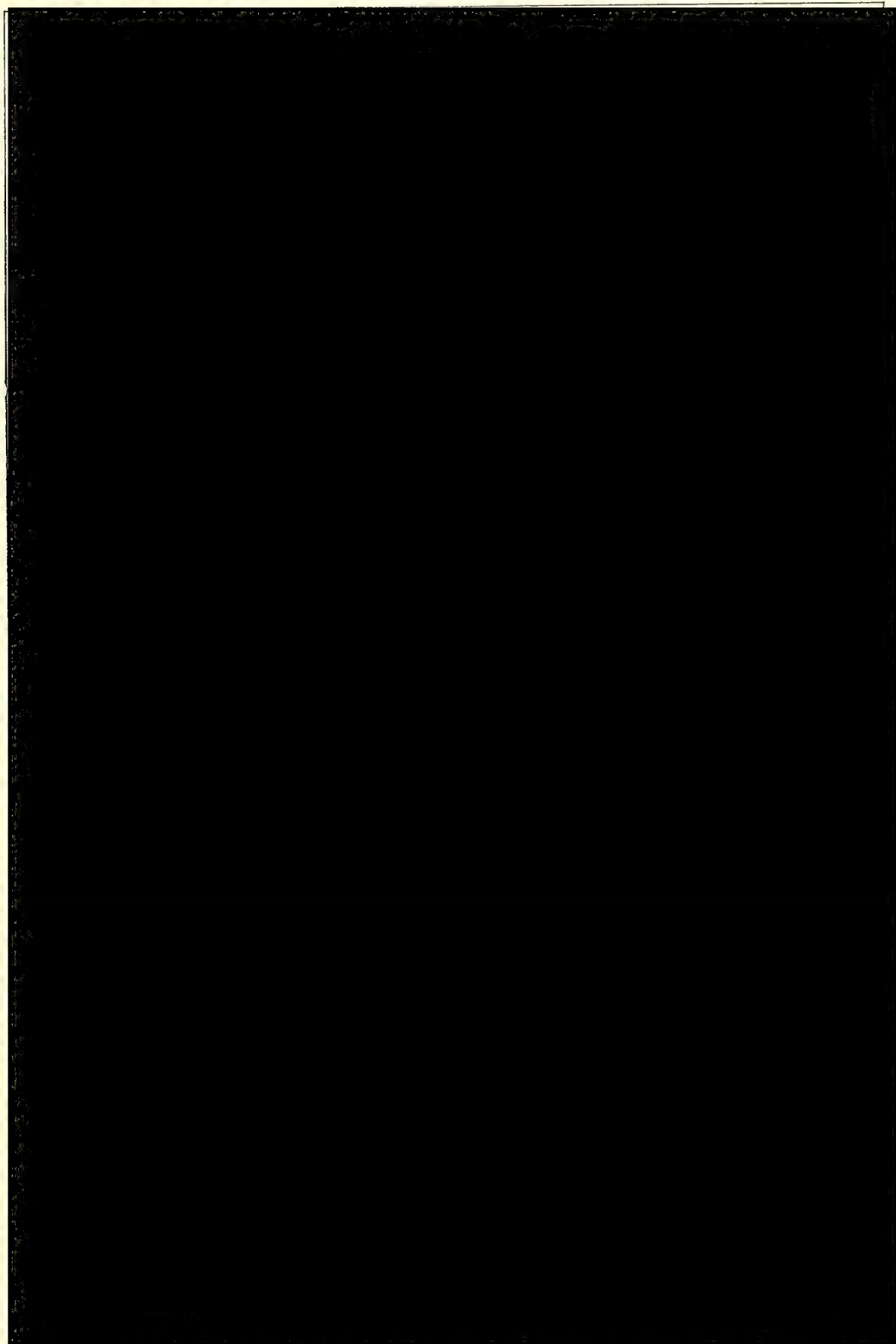


FIG. 145.—Two Geisha girls celebrated for their beauty. (Photo, E. Baelz.)



Women in the Malacca Peninsula and parts of the island of Sumatra seem to be more heavily and squarely built ; their skins, described both as olive and coppery brown, show no flush of colour in the cheeks ; and their tongues, gums and lips have an even deeper purple tint than those of their menfolk.

[The ideas of beauty among the Battak have been described by Leeuw (p. 246). The hair must be black and the smooth skin brownish-yellow. The eyebrows must be arched and the



FIG. 146.—Japanese woman with painted face and eyebrows and blackened teeth.

eyes must glitter like Chinese mirrors. Teeth should be even and the lips red as a mango fruit. The whole body should be symmetrically formed and as smooth as a kernel of rice.]

The Singhalese of Ceylon also have examples of face and form which—apart from the skin-colour (an additional attraction to some)—would be considered quite beautiful, or at least very comely in Europe. The younger women have for long been noted for their beautiful, erect carriage, soft skin, full, firm breasts, rounded buttocks and well-formed feet.

Wallace declared that hard toil, privations and very early married life gave the women of the Aru Islands an unfeminine appearance. Ribbe's account is different. He says : " In Watulei, I saw young wives of wealthy men who wore bead chains round breast and hips as well



as encircling their throats. They often hung tiny bells between their breasts and, thus decked out, these village girls looked quite graceful and pretty, though they went about half-naked. They differed from the women of allied race on neighbouring shores by reason of their fine womanly figures and grace of movement."

Przevalsky says that the Tibetan women are squat, dirty and plain, though now and again one sees tolerably good-looking faces; they have lighter skins and more evenly set teeth than their men.

The appearance of the women of Japan strikes us much more favourably than that of their Chinese neighbours. The Japanese girl of the higher social classes is very attractive; grace of movement and manner are her heritage from the cradle; her round childish face is full of expression; and her slightly oblique, black eyes have an extremely mischievous expression. Her teeth are very white, set somewhat apart and slightly prominent; her hair long and thick. Many married women in Japan stain their teeth black and pluck out their eyebrows; replacing the natural hair with a thin line of black paint, but their extremely amiable and expressive eyes are praised by all. A Japanese term for a young unmarried woman is *Shiraha*, or "White Teeth" (Ehmann).

[Bacon, in discussing the ideals of Japanese beauty, states the following characteristics as much admired. Face, long and narrow with forehead high and narrow in the middle. Hair, glossy, straight and smooth. Eyes, long and narrow, starting upward at the outer corners. Nose, low at the bridge, giving the face a flat appearance. Mouth, small; lips, red and full; and complexion clear ivory-white. Figure, slim and delicate, with narrow hips. The carriage should be graceful and the body slightly bent forward. The step should be short and quick with the toes turned in (p. 50).]

The Chinese women appeal far less to European æsthetic sense. They are small in stature and insignificant, and their sedentary lives induce a pallor with a sallow tinge. Their faces are so round as to be almost circular. Their racial characteristic, the shape and setting of their eyes, often gives a certain piquancy—but the salient cheek bones, short flat nose, heavy lips and smooth coarse hair are not attractive.

## 9. BEAUTY IN OCEANIA

Many travellers have praised the native women of Hawaii as pretty or comely. Their figures are very shapely below the age of 30; but they age very soon, as all observers agree. The women of the aristocratic class are, like their men, very powerfully built and often corpulent, a characteristic which Hawaiians think charming, according to Bechtinger.

On Tahiti there is a native aristocracy whose men are, as a rule, 6 ft. (or above it) in height and the women almost as tall. The Tahitian women generally wear

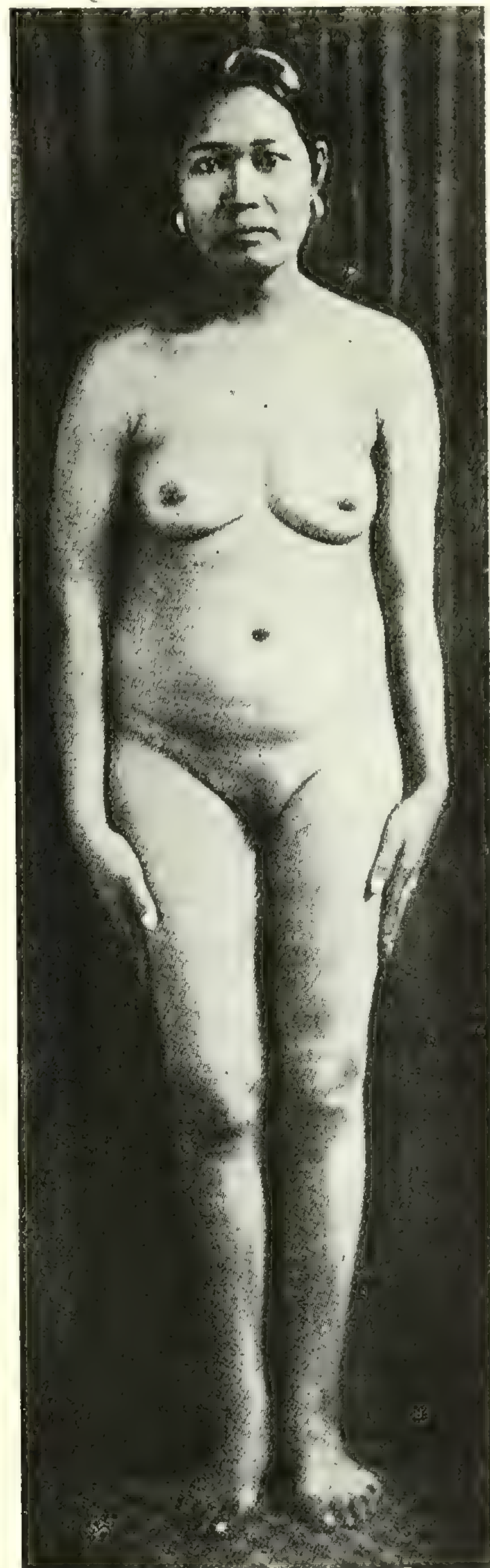


FIG. 147.—Chinese woman of 22.  
(Photo, B. Hagen.)



ample clothing and lead rather sedentary lives ; their clothing and customs tend to make their skins pale, and they often have warm pink cheeks which show blushes. Forster describes their great laughing, lustrous eyes and sweet smiles with enthusiasm, but admits that they are not regularly handsome and that their chief charm is their affability and geniality.

Porter describes the women of the Marquesas Islands as less comely than their menfolk. They have shapely figures but ugly feet and an ugly, swaying walk. Krusenstern found them



FIG. 148.—Woman from North China. (Anthrop. Ges., Berlin.)

short in stature and with thick waists but softly rounded faces, large sparkling eyes, lovely teeth and skins glowing with health.

The Samoan girls and women are thus described by Zöller : “ It would be difficult to pick out real beauties among them, but prettiness and good looks abound, at least so long as they are young.” Krämer praises “ the fine structure and outline of the thorax, whose ribs have never been distorted and compressed by stays. The long, classic, slightly convergent lines sweep from arm-pits to waist and then arch boldly outwards to the hips.” But there is no doubt that Samoan faces can also be very regular and attractive.



The Maori women of New Zealand are not considered pretty. They have very wide mouths and broad nostrils, emphasised by the ritual tattoo marks on lower lips and chin. Rutherford compares these tattoo patterns to a crown reversed. The Maori women are not graceful, though very muscular and agile: there is something violent in their active, primitive force. But Büchner has recorded having seen some handsome and stately figures among Maori women.

The New Hebrides are inhabited by Melanesians. Forster found the Melanesian women of Tanna Island small and, in general, plain, even ugly. On Vate, another island of the New Hebridian Group, the women are tall and thin according to Erskine. But on Malekula they are ugly and badly formed; which is not to be wondered at considering the heavy work they have to do. Their breasts are long, almost tubular, and very disfiguring. The same is said of the



FIG. 149.—Woman from Honolulu. (Photo, G. Häckel, Berlin.)

women of Aoba, and the palm for unattractiveness in the New Hebrides goes to the women of Vanikoro, as soon as they have passed their youth, which has a certain comeliness.

The natives of New Guinea or Papua are also Melanesians. They do not appear attractive to Europeans, though very pretty faces are said to occur among them; but among the boys rather than the girls. As a rule, however, they seem to us decidedly ugly.

In the Admiralty Islands the men are tall and finely made, but the women far inferior in stature and comeliness and, as the "Challenger" reports testify, the use of betel nut makes their appearance positively repellent. Miklucho-Maclay adds further particulars: he describes the older women as very thin and bony, and their shaven heads, deep wrinkles, flat chests and skinny muscular limbs are like those of elderly men.

Amongst the Gilbert Islanders there is marked difference in height between the sexes. The Gilbert Island women have slender limbs and soft pleasant faces. Meinicke praises their



“long black curls, regular features full of animation and intelligence, well-developed foreheads and bright, dark eyes. Their cheek bones project somewhat and their noses are broad. Their white teeth often suffer from chewing pandanus.”

The native women of Easter Island are recorded as having curiously lax and tired-looking features even among quite young girls. Their faces were very round in youth, but lost this fullness in later years. The Easter Island women, it is said, were the smallest in stature of all the South Seas, and somewhat lighter in complexion than the men.

Among the Australian aborigines, the women are of medium height ; if they are tall they



FIG. 150.—Woman from Marquesas Islands. (Mus. f. Volkerk., Dresden.)

are greatly admired and sought after as beauties. They are in their prime from 10 to 14 years old. Mücke, who lived among the black folk of Southern Australia for years, spoke in terms of admiration of one native girl of 15 ; her figure was of the “finest symmetry,” with firm, round limbs, her skin like dusky velvet and “her full lips visibly red and parting to show the best set of ivory-white teeth, gleaming like pearls.”

Other writers describe the pathetic ugliness of these women, in the neighbourhood of Adelaide. And in Northern Australia they are reported by Browne as stunted, shrivelled and of wretched appearance.

In 1884 a troupe of Australian aborigines were brought to Berlin, where they were visited and studied by Rudolph Virchow. This great anthropologist emphasised his astonishment at



the ease, directness and even beauty of movement in these members of a primitive race. He said : “ These women have such a graceful carriage of the head, such elegance of movement—whether of body or limbs—that they might have been brought up in the highest circles of our European Society.”

### 10. BEAUTY IN AMERICA

The people of the United States of America have amalgamated from many racial stocks into a nation with a distinct national type of their own. This type is manifest in their women as well ; its defects are thus pilloried by one of their own countrymen : “ They have neither

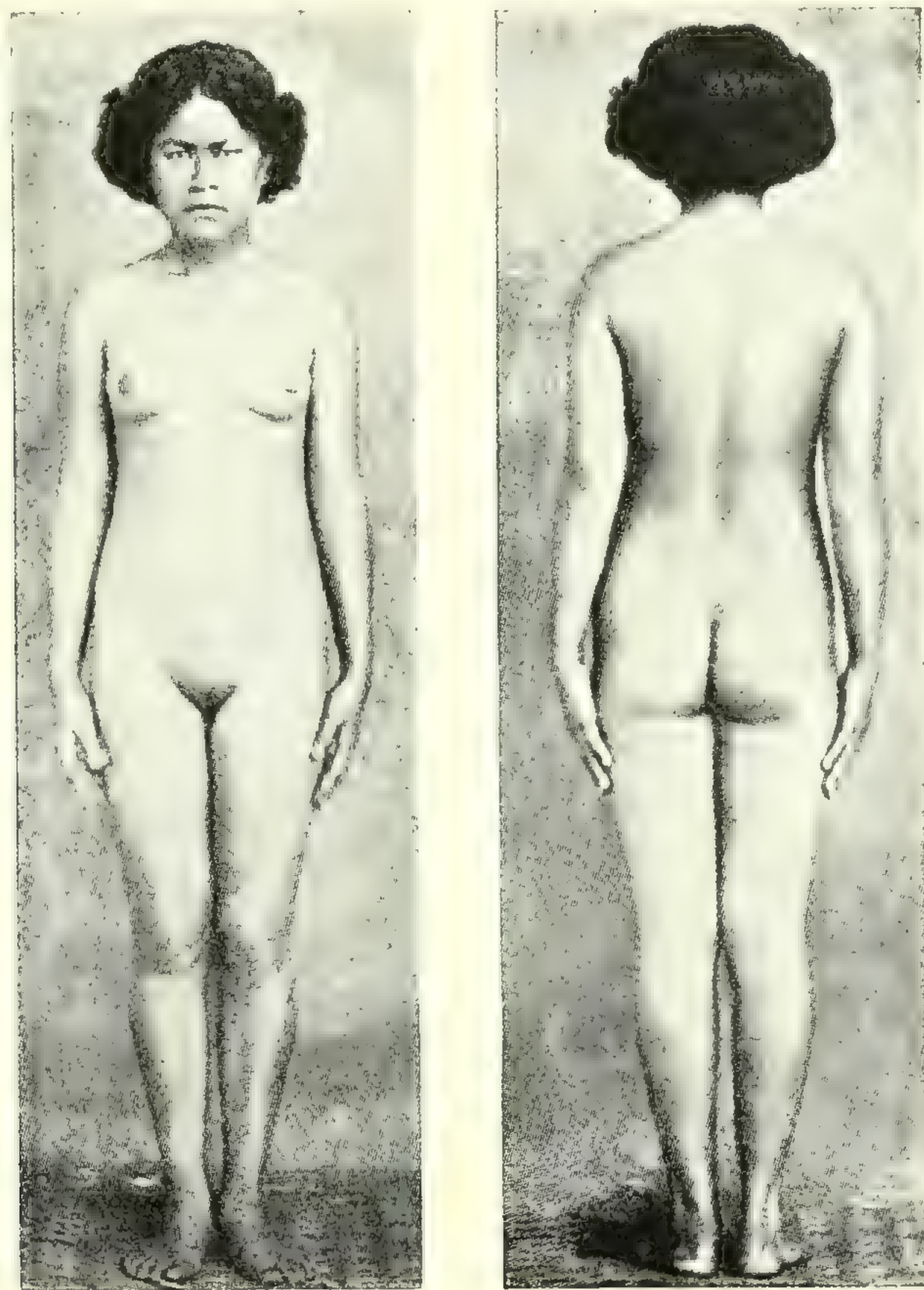


FIG. 151.—Samoan girl of 14. (Godeffroy Coll.)

bones nor muscles, nor sap of life in their veins—they have only nerves. And how, indeed could it be otherwise ? Instead of bread they eat chalk ; instead of wine, they drink iced water ; their shoes are too thin, their clothing too tight.”

Schweiger-Lerchenfeld quotes the opinion of many Europeans who concur respecting the American women of the Eastern and Northern States especially ; they admit many personal charms, delicate pallor, beautiful features, and grace, but note the lack of something fundamentally vital. He maintains that the racial differences of the old Colonial days are still traceable. He claims to be able to distinguish Dutch and Flemish traits in the eyes and colouring of dwellers in the North. The New Yorker has more colour ; the Boston girl is at the same time livelier and more delicate. Be that as it may, the racial type of British beauty is still found undiminished and undimmed among the upper classes of New England and the Southern States. [The women of the United States belong to so many diverse types owing to the different nationalities resident there that any detailed considerations are impossible. Standards of beauty conform largely to





FIG. 152.—Samoan Woman. (After v. Reitzenstein.)

prevailing fashions, and correspond to the ideas of beauty current in Europe at the time. The wide use of cosmetics and "beauty" preparations indicates the attention the American girl pays to her body. Moreover, the cult of athleticism in the younger women tends to produce a





FIG. 153.—Maori Women wearing breast ornaments (*Hei-tiki*) made of green-stone.



well-built figure with good bodily proportions. Journals such as *Beauty* and numerous text-books on beauty culture provide material for studying prevailing fashions.]

Mexican women are not pleasing to all tastes, although urban women of purely or mainly Spanish descent are worthy representatives of their racial type ; they have lustrous black eyes and raven hair and dazzling teeth. They are not tall, but move with extreme grace. The Mexican women of the country and provinces are less attractive ; their eyes, hair and teeth match those of the town dwellers, but they have prominent cheek bones, large mouths and badly formed noses.

The women of Arctic America—like their menfolk—are even less attractive in European eyes. There are great differences, however, between the inhabitants of the eastern and western



FIG. 154.—Samoan girl. (After A. Berger.)

coasts of Greenland. Finn says : “ The West Greenlanders are full-blooded Eskimo and, as a rule, squat in build with a waddling gait and protruding stomach. The eastern coast has taller, slenderer women of much pleasanter physique and appearance. All Greenland Eskimo women have relatively small hands and feet.”

N. A. E. Nordenskiöld writes : “ A Greenland *belle* in holiday attire looks far from ill ; her brown skin is clear and wholesome, her cheeks round and smooth. Her close-fitting costume is made of selected seals’ hide ; her graceful little boots have high tops and brightly-coloured beads are twisted round her neck and hair. Her physical features are enhanced by her cheerful spontaneous gaiety and by a considerable amount of coquetry. . . . She is wooed and won with some display of force, but she prefers that method. When she is a wife and brings her children into the world, she neglects her appearance ; her proud straight carriage is bowed beneath the burden of the children carried on her back, her roundness of limb and form vanishes, her walk



becomes a stiff stagger, her hair falls out at the temples and her teeth are worn down to the roots, for the hides are chewed by the women in the process of 'dressing.' The girls are pleasant to behold, but, as matrons, they grow repulsively ugly and dirty."

Holmberg reports that the Tlingit women of the North-West coast walk bent and with a



FIG. 155.—Woman from Fiji. (After Friedenthal.)

waddling gait, whereas their menfolk stride proudly ; small hands and, as a rule, small feet, are characteristic of this tribe.

Among various Indian tribes of North America the women are of noticeably short stature. [G. W. James and R. W. Shufeldt have both dealt with the Indians' ideals of beauty.] Bartram states that the Creek women are rarely over 5 ft. in height. They are, as a rule, squat and



broad in proportion to their height, with round massive heads and wide, round, rather flat faces (Prince M. zu Wied). Parker describes the North American Indian squaw as generally



FIG. 156.—Woman from New South Wales. (Anthrop. Soc., Berlin.)

short, strongly built, capable of incessant toil and of enduring great hardships; with wide shoulders, long arms and massive hips in harmony with a capacious pelvis.

Among the Indian tribes of the Southern Continent, F. von Hellwald has mentioned the Conibo women on the Juruha River as small, but with less thin lower limbs and less protuberant abdomens than most others.

The young Arawak girls of Guiana have a certain fame for fine bodily proportions, round



muscular limbs and an almost classical cast of features. Their eyes are large and black, and according to Appun their figures are extremely graceful and feminine and their profiles “purely



FIG. 157.—Woman from the Tonga Islands. (After Reitzenstein.)

Greek ” ; and the Arecuna women are the prettiest of all their race. On the other hand, the Taruma are said to be the least attractive. But tastes differ in these matters. Appun can



hardly find words fit to praise the charms of these aboriginal women of tropical South America, whereas Sachs gives a very different description of them.

The Patagonians, at the southern extremity of the continent between the Chilean Andes and the Atlantic, are very tall muscular people. Their women are on an average much shorter and with less dense hair, but very shapely and muscular.

The women of the Magellan Strait Fuegians are also much smaller than the men. Their faces have been described as "squashed out" or flattened in appearance, as though between two boards. Their noses are very flat, their cheek bones protrude. Some writers have described them as very fat.



FIG. 158.—Mohegan girl. (North American.)

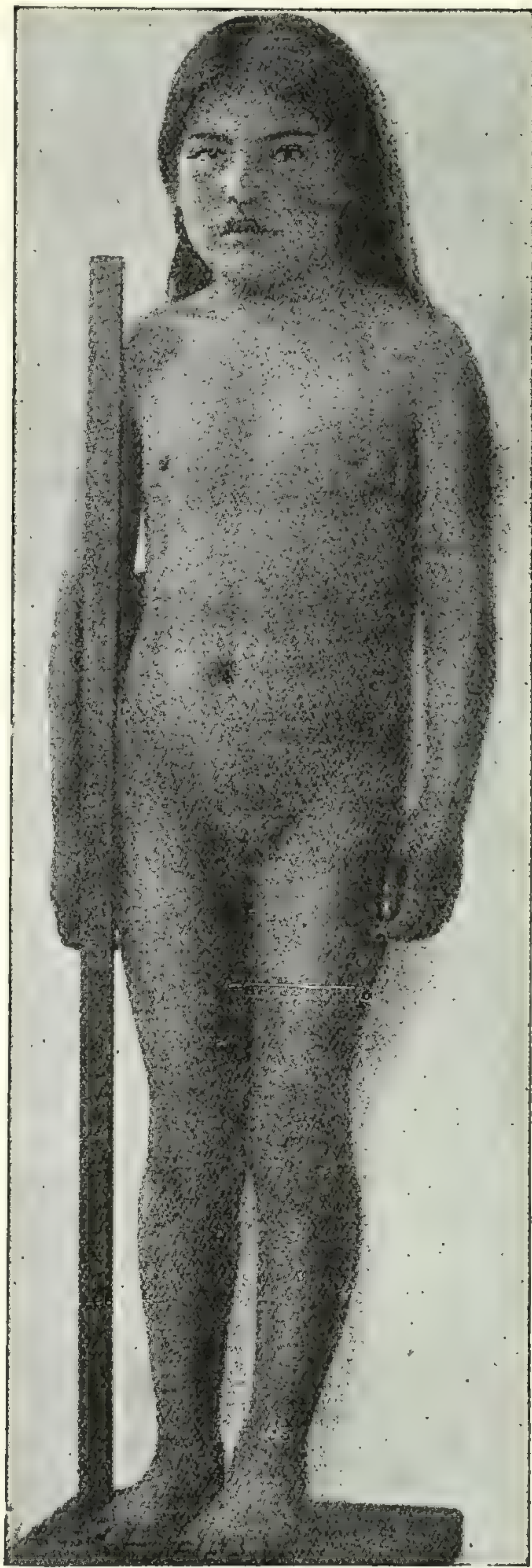


FIG. 159.—Aymara (Peru) girl of 10 years. The measuring rod is 1 m. high. (After Posnansky.)

The Bush negresses of Surinam have affinities with Africa. There is a strong strain of this negro blood throughout Central and South America, blended both with the coloured and white races. Prince Roland Bonaparte praises their admirable proportions and soft velvety skins, but adds: "Their evanescent beauty only lasts for a very brief time."



## 11. BEAUTY IN AFRICA

Schweiger Lerchenfeld attributes finely-shaped, delicate hands and feet to almost every Egyptian woman. They walk with a natural grace, although that rhythmic swing of the hips known to the Arabs as "Ghung" does not suit all of them. They have deep, dark, melting and very expressive eyes, which the yashmak does not entirely conceal.

R. Hartmann has remarked upon the permanence of the ancient physical type in Egypt. The modern women are very like those of ancient Egypt. The young girls are uncommonly graceful; they are as slim and young as the royal princesses shown naked on a wall at Thebes



FIG. 160.—Eskimo girl from Columbia, who received a beauty prize at a Seattle exhibition.  
(Photo, Haeckel, Berlin.)

playing a sort of chess or draughts with their father Rameses III. Hartmann observed that the shoulders and arms of the women were very shapely, but their lower limbs, from thigh to foot, less so, for, when the peasants wade through the arms of the Nile and the marshes at low water, they lift their garments almost to the waist. Their shoulders and sometimes the upper portion of their arms are very well shaped. The thighs, legs and arms below the elbows are often too thin, although there are some pleasing exceptions to this rule.

As Frhr. von Maltzan has said of the maidens in the nomad tents of Tripoli, Arabs are only beautiful for a very brief season, but, in this flowering time, they are indeed fit brides for the sons of a god. They embody the poetry and mystery of the desert. Their skins are warmly golden; their hair has a dense blackness with a tinge of metallic blue; their eyes are the deepest wells of darkness with silken lashes, and their figures slender, with delicate bones and rounded curves. In order to appreciate Arabian grace and beauty, no Western civilisation is necessary;



the Arab nomads of North Africa, intensely excitable and susceptible to every impression of the senses, have celebrated the charms of their women in terms of the most superlative and extravagant imagery.

But these charms begin to fade at about 16 years of age. It is the most evanescent of all feminine types, combining the most ardent passion with the most fragile elegance of form. Chavanne praises the dusky skins and the wonderful glow, half rose, half gold, in their cheeks,



FIG. 161.—Women from Bornu and Darfur. (Anthrop. Soc., Berlin.)

the delicate roundness of their limbs, the almost excessive brilliance of their eyes and the sable fleece of their hair; they are phantoms of dusk and flame—but, at 30, they have become appallingly ugly, wrinkled, faded, reduced to skin and bone—excepting in such districts as Tuat, where they keep their plumpness for several years, as do the Berber women in the coast towns.

Among the Nubians (Barabra), the women are slender with spindly tapering limbs. The girls reach puberty later than the Egyptians, and even at 14 years of age their breasts have scarcely begun to develop. Like all Africans, they wither early and, in old age, according to Hartmann,<sup>6</sup> the Nubian women are conspicuously ugly.



Paulitschke says: "The Somali have sometimes pleasant faces and full, well-formed breasts. I noticed also their snub noses, projecting brows and small delicately moulded ears. Their necks are finely shaped, the hips narrow, but pelvis wide with marked gluteal development; they move with ease and agility. In their middle twenties their faces become seamed with wrinkles and their breasts wrinkled and flaccid: by the time they are 40, they are painfully ugly."

Juan Maria Schuver gives this account of the Galla (Oromo) of Abyssinia: "The women of all classes, with the exception of the very poorest, are such a contrast to their lean, bony and generally sullen and sombre looking menfolk, that I never ceased to marvel at this disparity. The younger women are so vivacious that they are hardly ever still and they retain their looks longer than the negresses, because perhaps, they have slaves to help them in their heavier daily



FIG. 162.—Hottentot woman of mixed parentage. (Photo, E. Speer.)

tasks. They are much shorter in stature than the men (10–15 cm.), although there are a few tall figures among them." He also mentions their breadth of shoulder and full rounded arms; and the same author found "the perfect proportions of antique statues" among the young Berta girls on the Upper Nile.

A similar account has been given of the Habab women: handsome in youth but ageing very soon.

The Beja women are not unattractive in youth. But, as they are generally given in marriage between 12 and 15, their dainty slender bodies and noticeably firm, well-developed breasts soon change and wither.

The same premature and painful decline is the rule among the tall, noble-looking and finely-made women of the Danakil and Saho in Abyssinia.

The women of Abyssinia proper are of middle height and often decidedly plump. They are often charming and most engaging in their manners. Their faces are round rather than oval, their foreheads prominent but not high, their mouths large and their chins often double. Their



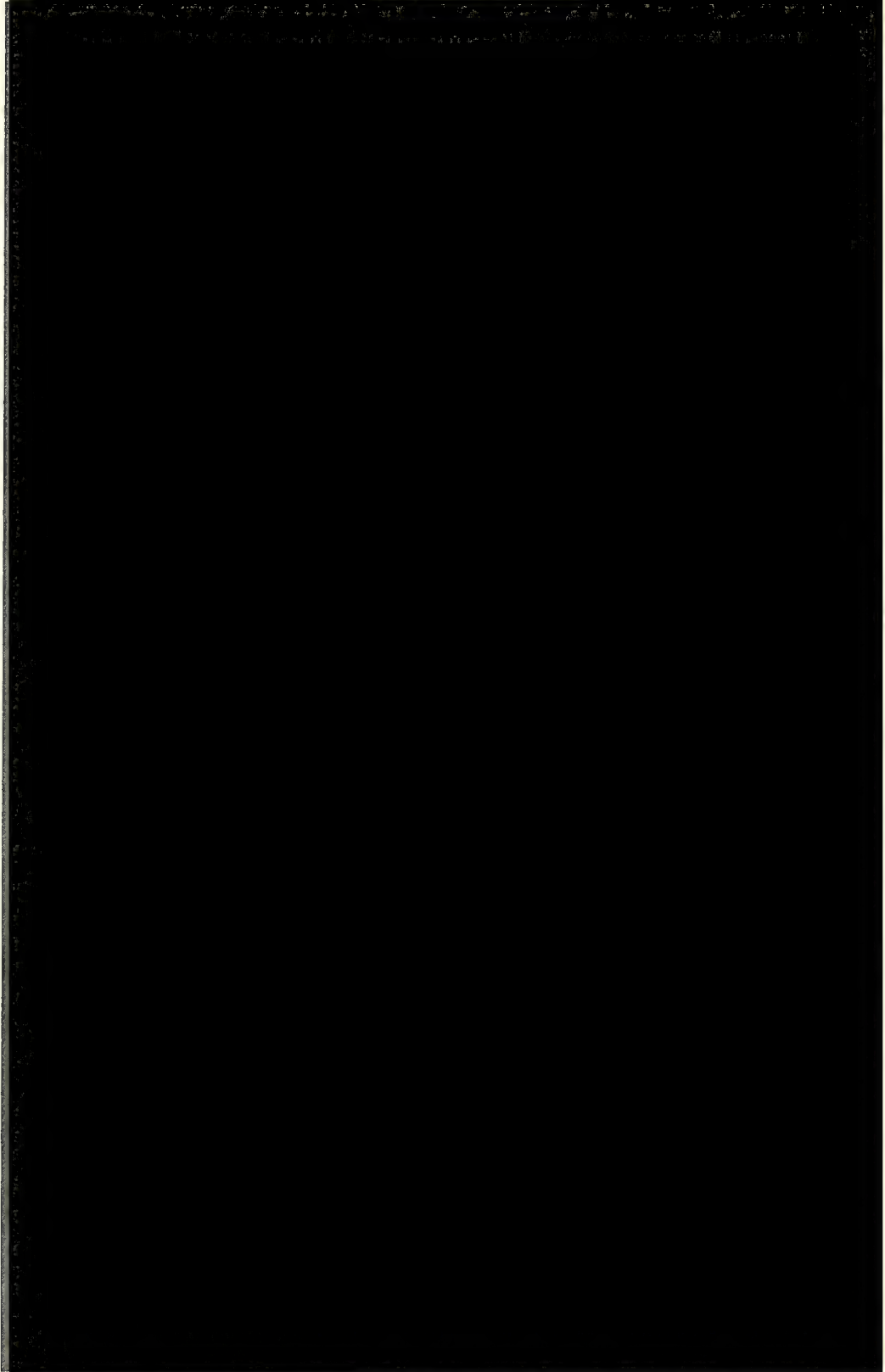


FIG. 163.—Berber girl of dark type from Tunis. (After Lehnert and Landrock.)



affability and considerable diligence have made them much in demand for the harems of Arabia.

The Saurta and Terroa are two tribes living on the slopes of Mt. Gedom between Massaua and Abyssinia. Their women are much smaller than the men and have pleasant faces, but are too thin for beauty of form. The hands of both men and women are exceptionally small.



FIG. 164.—Wagaja women (East Africa). (Photo, G. Haeckel, Berlin.)

Rohlf's remarks : "This peculiarity is common to all Abyssinians, whose hands are much too small to be pretty." One reason is weakness from idleness and lack of exercise.

Even among full-blooded negro tribes there are young women and girls of attractive appearance. But their comeliness is very evanescent and when brief youth is over, they are often positively ugly.

Again, the Bahima women (Tanganyika) are decidedly well built, as is shown by Weiss, though the lower limbs are too slender, especially between knee and ankle.

Some of the natives of the Gaboon may almost be termed pretty. Their hands and feet are shapely, their eyes full of expression and their noses comparatively high bridged. Their mouths





FIG. 165.—Ituri pygmy. (After v. Reitzenstein.)





FIG. 166.—Zulu woman. (After v. Reitzenstein.)



are not too large and their teeth are flawless. The lower lip, however, is somewhat pouting and swollen.

The Wolof (Jolof) negresses might also be termed comely were it not for their undeveloped and spindly lower legs ; a Negro characteristic in exaggerated form. Their feet are very flat and the heel projects almost like a spur.

Audebert mentions the figure and carriage of some of the natives in the interior of Madagascar. They hold themselves erect, some protrude the abdomen excessively, but all have slender, muscular, well-proportioned shapes, unconfined by corsets.

Wangemann says that : "Some of the Basuto women and men in the Transvaal have superb figures. But the breasts tend to sag in an almost pouch-like fashion, which is repulsive, although some of the younger girls have beautiful figures."

Among the Zulu women there are some exquisite figures with faces full of character and intelligence. Wiese says of the women of the Angoni (a Zulu tribe north of the Zambesi River), that they are "often quite beautiful and apt to inspire enthusiastic passion in their partners."

Some African types are shown in Figs. 161-166.

## 12. ÆSTHETIC IDEALS OF VARIOUS RACES

If we look at humanity throughout the earth and observe the existence of desire and admiration even among and for physical types which appear repulsive or ridiculous in our eyes, we are bound to admit that beauty lives in the beholder's eye and varies according to the beholder's tastes. It would be of considerable ethnological and anthropological interest to define the ideal beauty of woman in each respective race or phase of culture. At first sight this might seem easy, as there are but few people who have not produced some forms of pictorial art—graphic or plastic—including attempts at representing the human form. Nevertheless, we should probably be much in error to believe that the carved or painted primitive representations of women always perpetuate the ideal of the individual craftsman or artist. In the majority of cases he probably aimed at constructing something unmistakably a female human being, and took the women of his own people as model, for he knew no others. And, as children do, he probably rejoiced exceedingly if his attempt were successful, *i.e.*, recognisable, without presuming to have depicted the typical beauty of his race.

If pictorial art\* fails us here there is another source of information, though often obscure and unexplored : the poetry—especially the lyric poetry and folk-songs—of the lovesick youths of any race and time, which generally expresses itself with a fair degree of clearness as to what seems specially wonderful or desirable in the women or girls of the poet's dreams (*cf.* Houdoy). We do not need to deal at length with the swan-like necks, the cheeks of "milk and blood," the snowy bosoms, the teeth of pearl and rosy lips and the eyes that outshone the stars—as mirrored in the love songs of all European peoples ; we will merely note the mediæval prescription for feminine loveliness quoted by Martin Schurig<sup>2</sup> from the words of Conrad Tiberus Rango : the perfectly beautiful woman is she who has :

"Two things firm (or hard), breast and buttocks ; two things soft, hands and belly ; two things short, nose and feet ; two things long, fingers and flanks ; two things black, eyes and quim ; two things red, cheeks and mouth ; two things white, thighs and neck."

\* [In art, ideal male and female figures are often reckoned as seven and a half heads high. Since the head of a woman is, on the average, about half an inch less than that of a man, the average difference in heights is often considered to be about three and a half inches. Stratz<sup>3</sup> has dealt with the question from the point of view of art and Jayle<sup>2</sup> from that of gynæcology. Further references will be found in those works.]



The oldest literary description of a girl of Teutonic race is probably the famous passage by the Roman poet Ausonius (*fl.* A.D. 350) in praise of the captive Bissula :

“ She whom Nature adorned with charms that no artist can picture,  
Though he may well do justice to others, with madder and white-lead,  
But this heavenly blending of colour escapes him—unless he  
Paints with a radiant lily, dipped in the essence of roses.

O thou delight ! Thou flattering joy ! Thou frolicsome Grace !  
How the Barbarian girl conquers the Latin ! “ Bissula.”—  
Her name sounds strange and rude to the stranger, I grant,  
But in Ausonius’ ear, sweetness and strangeness are one.

Thou wast freed from captivity and thou hast conquered  
Him who erst took thee captive. His heart was thy spoil.  
Thou hast not known the care of a mother, the rule of a mistress,  
For in captivity straight thou wast lady and queen.

Though by the favour of Rome thou wast mistress, thy beauty unchanging  
Keeps the north in the blue of thine eyes, in the gold of thine hair.  
Twofold thy glory among us, twofold thine arms and adornment :  
Latin tongue for thy wit, Swabian charm for thy face ! ”

A few centuries later we have the same type of colouring in Angilbert’s description of one of the daughters of Charlemagne :

“ After Gisela came Bertha, in dazzling white robe,  
With a bevy of maidens, gold shimmering daughter of kings.  
Crimson threads were woven into her wimple’s fine tissue,  
And her face and her hair shone in a glory of light.

And her neck shone too and blushed into delicate roseate,  
Argent her fingers and hands, threads of spun gold round her brow,  
And her luminous eyes outshone the day in its splendour,  
Thus the peerless maid mounted her high mettled steed.

There is no doubt that this particular ideal type has been influenced by classical antiquity and the poetry of the later Middle Ages shows unmistakable Arab and Moorish affinities. A specimen of the more refined Arab taste is by Abbas ibn Ahnaf.

The poet speaks of the slender form that sways Narcissus-like and the face “ of pearl ” and sweet breath of her of whom he has lost trace behind “ dark walls ” :

“ Is she of mortal race ?  
Or of the Djinn ?  
For she has elfin power  
But naught that’s false or fell.

When in her fluttering robe  
She floats, nor seems to move,  
She hardly bends the grass blades  
That her feet lightly brush.”

The ideal beauty of the *Minnesängers* has been summarised thus by Scherr,<sup>2</sup> who studied all their surviving songs.

“ In those days, a woman who wished to be accorded the prize of beauty, must have been of medium height and of slender and very supple build. Symmetry and a gracious roundness



were essentials, especially in the hips ; straight legs, small feet with arched insteps, firm white arms and hands, long smooth taper fingers and throat, and the bosom firm and with sweeping curves, but not too exuberant. The cheeks must bloom like roses wet with dew, out of the delicate pink of the face. The mouth should be small, firmly shut and sweet of breath ; the enamel of the teeth should flash between swelling crimson lips, like ‘royal ermine on scarlet.’ The charm of the mouth should melt into a round chin with a dimple white as the blossom of the sloe.

“The eyes should be set wide apart and the nose straight and neither too long nor too sharp, nor too blunt. Thin, long, rather straight lines of eyebrow and the colour was expected to vary slightly from that of the hair. The eyes were expected to be clear and ‘shine into the heart.’ A popular colour was blue, but even more admired was that curious changing tint seen in the eyes of some birds.

“Finally, the courtly connoisseurs were very insistent on fair hair, with a golden lustre, curling round white temples veined with a tracery of blue.”

Herr Ernst Loether, of Pössneck in Thuringia, was kind enough to forward Dr. Max Bartels the subjoined extract from a collection of German humour and folk sayings (“Das Wohlgefüllte Schatzkästlein deutschen Scherzes & Humors”) on the topic of women’s beauty. It appears in many versions in European literature from the Middle Ages till to-day :

“A lovely maid, I’ve heard it said  
Should get from Prague her little head,  
Two sparkling eyes from France,  
From Austria her red mouth,  
Her snow-white hands from Cologne,  
Her slim loins from Brabant,  
Her narrow feet from England’s seas,  
Her little round breasts from the Low Countries,  
From Spain her body ; from Flanders her arms,  
And her round buttocks from Swabia—  
She who hath all these, is worth all gifts.”

Havelock Ellis (in “Sexual Selection in Man”) has collected several interesting passages from modern and mediæval literature, showing the changes in the cultural ideal of feminine beauty. He also quotes some Asiatic poems and dissertations on this theme, to which we can only refer our readers.

It would be of even greater interest for us, as anthropologists, to be able to delve into the descriptive ecstasies of more primitive and ancient peoples. Unfortunately, we only have few and fragmentary sources, for this mine of human material is hardly worked at all even in the most recondite anthologies and the most voluminous collections. But even such examples as are known to us prove two facts : first, the strangeness and often almost repulsive extravagance—to our taste—of the metaphors and similes used in praise of women’s beauty ; *i.e.*, its range of association in men’s minds ; and, secondly, under all these bizarre trappings the universally international and eternal masculine preference for certain special physical qualities and attributes of women.

Nearly all these early examples are of Asiatic origin. Take, first of all, the ancient Sanskrit story of Nala and Damayanti :

“The rough huntsman beheld that bewitching princess, clad in but half a garment, reclining on his arm. He saw the deep bosom and rounded hips, the delicate and faultless limbs, her fair face as bright as the full moon and the long curving lashes over her large eyes like the painted darts of Kama’s bow. He heard her voice as sweet as honey, and was inflamed



by wild desire, for in his heart was the smarting wound which the shaft of the flowery-arrowed god inflicts. He began to soothe her with a winning voice and soft words, his horny hand caressing the soft ripple of her thigh."

A few further quotations from the Sanskrit, and first, the words of Dāmodaragupta in "Kuṭṭanīmatam" :

"Oh fair One, with thighs like the trunks of elephants ! Those thighs of thine alone are like twin pisang stems and ravish the heart !" etc.

"She walks slowly along, such is the weight of thighs and breasts, and seeks to become expert in snaring the hearts of youth."

Or :

"She there, of the long restless eyes, of the great, curved, firm bosom, who walks slowly under the burden of her mounded hips : she is my dearest, who robs me of my life."

The following verses are more detailed :

"A face that mocks the moon ; eyes that are fit to make water-lilies ashamed ; a skin hued more wondrously than gold ; dense hair like a cloud of black bees ; breasts more splendid than the bosses on the brow of elephants ; heavy hips and the sparkling gentleness of speech : these are the natural adornment and graces of a maiden."

"Her face is almond-eyed and luminous as autumn moons : her arms slide softly from her shoulders, her ribs are narrow but carry closely-set prominent breasts ; her flanks are smooth and as though polished, her waist may be clasped by two hands, her loins have large buttocks and her feet curved toes. Even as a dancer might wish, so has her body been framed."

Dāmodaragupta also praises slender forms and luxuriant hair :

"The weight of thy tresses, which are like the cloud of smoke ascending from the furnace of love."

The Berlin Museum für Völkerkunde has an ancient stone statue representing Sitā, the wife of Rāma Chandra, which corresponds to the ideal of Sanskrit beauty. It was discovered at Djindji, a village in Madras Presidency.

The sages advised young men on the quest for wives to pay special heed to the following qualities in the girls they wooed :

"Maidens are fit for marriage if they have the charm of a blue water-lily petal or a sheen of gold ; hair sable as a swarm of black bees, a face like a moon and eyes like a gazelle-fawn. If their noses are like sesame blossoms ; if they have a fine row of teeth, delicate ears, the voice of the Pika (Indian Cuckoo), a shell-like neck and Bimba lips. If their pink stained hands and feet are marked with the 'circle' and other signs ; if their bodies are fragile and their thighs rejoice the heart like pisang trees ; if they have broad hips and very deep set navels and walk with the majesty of elephants," etc.

Dimples were not approved. Suitors were warned against wedlock with girls "who have dimples in either cheek" or even those "in whose cheeks dimples appear when they laugh" (Schmidt).

The poetry of the Ancient Hebrews, as preserved in the Old Testament, has similar descriptions of and prescriptions for feminine beauty : especially in that great "Song of Songs which is Solomon's."

9 I have compared thee, O my love, to a company of horses in Pharaoh's chariots.

10 Thy cheeks are comely with rows of jewels, thy neck with chains of gold.



11 We will make thee borders of gold with studs of silver.

12 ¶ While the king *sitteth* at his table, my spikenard sendeth forth the smell thereof.

13 A bundle of myrrh *is* my well-beloved unto me ; he shall lie all night betwixt my breasts.

14 My beloved *is* unto me *as* a cluster of camphire in the vineyards of En-gedi.

15 Behold, thou *art* fair, my love ; behold, thou *art* fair ; thou *hast* doves' eyes.

16 Behold, thou *art* fair, my beloved, yea, pleasant : also our bed *is* green.

BEHOLD, thou *art* fair, my love ; behold, thou *art* fair ; thou *hast* doves' eyes within thy locks : thy hair *is* as a flock of goats, that appear from mount Gilead.

2 Thy teeth *are* like a flock of *sheep that are even* shorn, which came up from the washing ; whereof every one bear twins, and none *is* barren among them.

3 Thy lips *are* like a thread of scarlet, and thy speech *is* comely : thy temples *are* like a piece of a pomegranate within thy locks.

4 Thy neck *is* like the tower of David builded for an armoury, whereon there hang a thousand bucklers, all shields of mighty men.

5 Thy two breasts *are* like two young roes that are twins, which feed among the lilies.

6 Until the day break, and the shadows flee away, I will get me to the mountain of myrrh, and to the hill of frankincense.

7 Thou *art* all fair, my love ; *there is* no spot in thee.

8 ¶ Come with me from Lebanon, *my* spouse, with me from Lebanon : look from the top of Amana, from the top of Shenir and Hermon, from the lions' dens, from the mountains of the leopards.

9 Thou hast ravished my heart, my sister, *my* spouse ; thou hast ravished my heart with one of thine eyes, with one chain of thy neck.

10 How fair is thy love, my sister, *my* spouse ! how much better is thy love than wine ! and the smell of thine ointments than all spices !

11 Thy lips, O *my* spouse, drop *as* the honeycomb : honey and milk *are* under thy tongue ; and the smell of thy garments *is* like the smell of Lebanon.

How beautiful are thy feet with shoes, O prince's daughter ! the joints of thy thighs *are* like jewels, the work of the hands of a cunning workman.

2 Thy navel *is like* a round goblet, *which* wanteth not liquor : thy belly *is like* an heap of wheat set about with lilies.

3 Thy two breasts *are* like two young roes *that are* twins.

4 Thy neck *is* as a tower of ivory ; thine eyes *like* the fishpools in Heshbon, by the gate of Bath-rabbim : thy nose *is* as the tower of Lebanon which looketh toward Damascus.

5 Thine head upon thee *is* like Carmel, and the hair of thine head like purple ; the king *is* held in the galleries.

6 How fair and how pleasant art thou, O love, for delights !

7 This thy stature is like to a palm tree, and thy breasts to clusters of grapes.

8 I said, I will go up to the palm tree, I will take hold of the boughs thereof : now also thy breasts shall be as clusters of the vine, and the smell of thy nose like apples ;

9 And the roof of thy mouth like the best wine for my beloved, that goeth *down* sweetly, causing the lips of those that are asleep to speak.

The allied Arabic poets praise the beauty of their beloved in verse peculiarly hard for Europeans to translate or appreciate because of the intricate rhyming and perpetual plays on words. Hariri of Basra, who flourished at the end of the eleventh century of the Christian Era, praised his love as "dark red of lips, hard as cliffs, straight as a tree and, in pride, incomparable" (F. Rückert). T. A. Hartmann<sup>1</sup> quotes another passage by Hariri in praise of "teeth gleaming like pearls, haildrops or bubbles of rare wine and white as the buds of camelias or palm blossom."

Another poet of Old Arabia, Amralkris, sings (T. A. Hartmann<sup>1</sup>) :

"The long tresses that adorn her are black as coals, thick and closely twisted as palm fronds. I took hold of the locks of her hair and she bent softly towards



me ; her body was slender, her hips wide and full. Her leg was like a palm stem by a fountain."

According to the same authority Motannabi, another Arab poet, compared his beloved's "night black hair, dense and curling by Nature not art" to the "odour of Scythian musk"—or amber ; and her glances to arrows, winged with plumes from her long lashes.

The poet Amru was also a famous Arab of old. He praised the beauty of his kinswoman Ablah in words that have been rendered into English by E. Powys Mathers\* in the following terms :

"She gives the air her long shapes and her curved shapes ;  
And hips so round and heavy that they are tired.  
All these noble abundances of girlhood  
Make the doors divinely narrow and myself insane."

The collection of Oriental folklore termed, though erroneously, "The Arabian Nights," is of Persian and Indian origin from the tenth century A.D., and contains much material from Hindustan. Nevertheless, the manuscripts of this work, which have come down to us, are in the Arabic language and are certainly not verbatim renderings of the originals but free adaptations by a later hand. The many poetical similes and descriptions in the course of the narratives are probably the work of this later chronicler and copyist and express the sentiments and sensations of the Arab race in æsthetic matters. The tales are full of the praise of women and the beauty of their bodies. A lovely girl is compared to the moon shining at night ; her breasts are as tightly closed buds ; and her cheeks are as apples with their delicate bloom. Her spittle is as honey and her eye as sharp as a scimitar. Her black hair hangs down to her feet.

The Persian poet, Firdusî lived and sang about A.D. 960. He praised the "arching eyelids," the snow-white teeth, the black hair, fragrant as musk ; the beauty of her bosom and the lips which "the breeze dare not touch, but longs for from afar."

The Turk, Ibrahim Bassa, praised the princess of his choice, comparing her great dark eyes to suns under the rosy dawn of her brow, and also remembering her "pert, dainty, pointed nose."

Among the Turkish nomads of Central Asia another sang of her daughter, dead before womanhood :

"I will praise my darling, she was sweet and pleasant as bread steeped in butter-milk !" †

Some songs of the Albanians are cited by J. G. van Hahn. We will quote two passages, one from Premet on the banks of the Voyussa :

"Thy brows slay me,  
When thou turnest away, looking sidelong !  
O darling, from thy mouth  
Flow honey and sugar ;  
Thy pearly teeth  
Are poison darts for my heart," etc.

\* Cf. also the renderings of Asiatic love poetry by Thalasso.

† Many interesting examples of the erotic poetry of both the Near and Far East are found in the two collections by E. Powys Mathers' "Coloured Stars" and "A Garden of Bright Waters."



Other mountain poets sing :

“ Darling slim as branches,  
And pale as amber ;  
Thy locks are like to harpstrings  
Thy fragrance mountain balm  
Thy mouth clove scented. ”

“ Be gracious to me, little one !  
Pomegranate, golden orange. ”

“ Small crimson berry, growing on the hillside. ”

Other verses praise brows black as night and “ love not red hair. ”

The Gipsies have love songs with highly fantastic similes. Heinrich v. Wlislöcki<sup>1</sup> quotes :

“ Her feet are flowers by the wayside, her shoulders white wheaten bread, her eyes are juicy grapes, her lips are blossoms. ”

Vámbery quotes the following rhapsody by an enamoured Bashkir :

“ Had I apple trees with apples  
I would not turn to the withered shrubs;  
Were my beloved with me,  
I'd take no thought for strangers. ”

Ahlqvist gives quotations from the folk songs of the Mordvins which show comparatively poor æsthetic imagination : but the hair of one Mordvinian maiden, Nata of the village Slavkina, daughter of the rich headman Shansja, is compared to the heavy plaited thongs of the knout.

Paasonen gives a more pleasing portrait of another Mordvinian Pelagia :

“ She is distinguished by her graceful gait :  
And masterpieces are her face and shape.  
She walks abroad in stockings and in shoes.  
  
“ Her form is like an upright birch, a reed that sways.  
Her face a pomegranate.  
Her eyes are sable sloes,  
Her hair, pale bands of silver ; little curls  
Like ravelled silver wire, play round her brow.  
Her braids hang heavy, chain-like, on her bosom. ”

The ancient national epic of the Finns, the Kalevala, has remarkable similes :

“ She is like the ripe cranberry  
The wild strawberry on the hillside  
Like the cuckoo, on the branches,  
Like the nestling in the ash tree,  
Fluttering wings among the birch leaves,  
Like the white throat on the maple !  
Never from the German cities,  
Nor from the Esthonian seashores,  
Came a maiden of such beauty,  
Came a swan of such resplendence . . . ”



Colquhoun has described the æsthetic ideal of China as demanding, above all, cheeks like almond blossom, lips like peach blossoms, a willowy form and the swaying grace of a lotus in the stream's current. Griesebach quotes from a Chinese tale : "The Casquet of Gems," as follows :

"Her form was slender and delicate, from head to toes ; her ways and manners amiable and full of fragrance. Her arched eyebrows were like the line of distant mountains ; they curved above the eyes which were like the quintessence of autumn seas. Her waist was like a lily stem, her lips the peaches that flower round the purity of a lofty mansion walled in white."

The Princess Chwang Kiang lived in the eighth century B.C., but has been immortalised in a poem communicated by v. Brandt <sup>2</sup> :

"Her fingers were like pale young blades of grass.  
Her skin smooth as liquid ointment.  
Her neck white as silk,  
Her teeth even and alike as melon seeds.  
Her brow broad as the cicada's.  
Her eyebrows delicate as a silk-moth's antennæ.  
How lovely her eyes where black and white gleamed side by side !  
Stately she was and tall of stature."

Baron Junker v. Langegg <sup>3</sup> quotes a Japanese on the ideal of his race to this effect :

"To begin with the head : it must not be either too large or too small. Great black eyes surrounded with a fringe of black lashes and overarched by sharply drawn black brows. An oval face, delicately pale with the faintest trace of rosy colour in the cheeks. A straight high-bridged nose. A small, symmetrical mouth with fresh lips, that sometimes part and show even white teeth. A narrow forehead on which the long black hair grows in a symmetrical arch. A rounded throat and well-developed but not too plump figure with moderately rounded breasts. Slender hips and small, but not too thin hands and feet."

E. and L. Selenka corroborate v. Baelz on the same theme :

"Poorly developed breasts may be overlooked, but wide hips are accounted a terrible disfigurement ! So the Japanese ladies wind round themselves a wide strip of material termed the *Obi* (or sash) which hides the natural outward curves. According to our European ideas, the Japanese have no æsthetic appreciation of the beauty of the female form as Nature formed it. They appreciate only facial loveliness and grace of carriage and movement. The Japanese girls and women have without exception such exquisitely shaped and turned necks, particularly at the nape, that their spoiled menfolk take this charm for granted ! There is a rule of etiquette commanding women to walk or stand with their feet turned inwards ; to walk or stand with their feet turned out is considered indecent."

Ehmann has collected proverbs and sayings from Nippon which include many *obiter dicta* on beauty.

The shape of the ideal face is compared to an egg, and finely shaped sets of teeth to melon seeds in a row. White fingers, delicate and slender, suggest silver fish. A "*Fuji-brow*" refers to the ideal shape of forehead and hair line.\* There is a striking proverb for exceptional beauty suggesting uncanny delicacy and glitter, as follows :

"Like a fairy, with a skin smooth as ice and bones like precious gems." Unlike the ancient Hindus, the Japanese admire dimples in women's cheeks and chins : "In a lover's eyes, pock-

\* Dr. Kunike (of Berlin) informs us that the same likeness to Fuji is admired in the line of hair at the nape of the neck. Fujiyama is the famous sacred mountain of Japan.



marks become dimples ! ” And “ For the little dimples of a woman, a palace itself is laid waste. ”

The Japanese women, according to ten Kate, dislike curly hair, and try to prevent this disfigurement by avoiding pickled octopus (a favourite article of diet) and by diligent prayer to the god Tako Yakushi.

But the centuries' pageantry of Japanese art shows indisputably that this highly developed civilisation has altered its æsthetic ideals to some extent. For instance, according to Dr. Kunike, thin legs were considered lovely in ancient Japan. Teeth were always noticed.

Riedel<sup>2</sup> cites a song from Northern Celebes in praise of “ The teeth of my beloved, spotted and splendid ! ”

Schmidt<sup>9</sup> and Selberg describe the ideal beauty of women as depicted in a poem of Old Java. The only specially original graphic details among the well-known “ moonfaced ” charms are “ arms supple as bow strings, fingers long and slender as thorns in the forest, nails like gleaming pearls yellow as gold ; feet flat to the ground and round, ivory breasts “ inclining towards one another. ”

Oberländer<sup>3</sup> introduces us to the Singhalese ideal : “ Hair to her knees, with curly ends ; brows arched like the rainbow, eyes like blue sapphires or the azure blossoms of the manilla. A hooked nose ; lips coral red ; breasts conical and firm as coconuts and a waist almost slender enough for a hand to span. Broad hips, tapering limbs and feet without any arch to their soles ; the surface of the whole body smoothly firm and rounded without protruding muscles or bony angles. ”

In the prophecies and promises of the founder of Islam to his followers, the houris are mentioned in sparing and conventional terms. They have eternal youth and their great black eyes are “ like the hidden eggs of the ostrich. ”

The Harari of South-east Abyssinia have some poetical passages in their love songs. Paulitschke cites one :

“ This I tell thee : thy face shines like silk ;  
Slender art thou as a spear shaft ;  
Thy face like a lamp that is lit.

“ I have dug for honey and I bring it thee ;  
I have drawn milk and I pour it thee ;  
Now indeed thou art pure honey and milk that foams :

“ Thine eyes are stained black with kohl.  
. . . Thine eyes are full-moons and thy body  
Fragrant as rose water.

“ And thou art as the King's Garden,  
Wherein all perfumes are assembled ;  
And thou art the fruit grown by a good husbandman.  
How shouldst thou wither ? ”

Morice has described the ideal beauty as desired by the Tinne tribe of North American Indians (Athabaskan). An oval face, large dark eyes, very long, thinly pencilled eyebrows, rich, dense hair, a low forehead, a clear skin, as light as possible, chubby cheeks, full, well-developed chest and large breasts ; and, above all, broad hips. The two chief charms are accounted : length of face from hair to chin and width of hip. When two women have a quarrel they abuse one another in terms such as “ Lynx ! ” and “ Blade of grass ! ”—for the lynx is wide-faced and the blade of grass is extremely slender.



J. B. v. Spix and v. Martius have cited passages from the songs and sayings of the Mauhe Indians of South America, which may be considered to throw some light on their ideal of beauty by contrast :

“ I like not her  
That hath her legs too slender  
For fear they twine about me  
As doth a writhing serpent.

“ I like not her  
That hath her hair too long  
For fear that it may cut me  
Like swordgrass in a thicket.”

It is interesting to compare these humble requirements with the elaborate descriptions of European and Asiatic cultures through the poetry of thousands of years from Anacreon till yesterday.



## CHAPTER IV

### CONSCIOUS PRODUCTION AND CULTURE OF BEAUTY BY ARTIFICIAL MEANS

#### 1. TASTE AND THE CONCEPT OF BEAUTY IN WOMEN

All human races try to increase and accentuate the physical characteristics which they consider beautiful; or to produce them by artificial means: these include foot deformation (in China); painting of the skin and body (among the American Indians), and skull deformation among many other races, and



FIG. 167.—Mincopi women (South Andaman). (Anthrop. Ges., Berlin.)

of which latter custom Dingwall<sup>1</sup> has given a full account. Everywhere vanity and approbateness are ready to inflict or bear suffering in order to be beautiful.

And between primitive races and fashionable ladies there is mainly this difference: that the deformations and mutilations practised by the "savages"



have the sanction of centuries of custom and tradition, whereas the others vary and change at the dictates of caprice and commerce.

Let us consider "primitive" races.

## 2. PAINTING

Sometimes the whole body is smeared with painted designs, as in many Indian tribes, extinct and surviving. But often these designs are concentrated on the face and their meaning is not only æsthetic but ritual as well.

For instance, in some tribes of American Indians the women paint their faces black when their husband and father die. Scott reports that the Li in Hainan have the



FIG. 168.—Yami woman from Formosa.



FIG. 169.—Taulipang woman (North Brazil).  
(After Koch-Grünberg.)

custom of painting the special sign of the bridegroom's ancestors on the bride's face on the wedding day, so that she may be recognised as one of his tribe. The Hindus wear the symbols of various sects and cults smeared on their foreheads. Moszkorski writes that in the central regions of Dutch New Guinea white paint means peace paint. Bieber<sup>3</sup> reports that blue stains on the lower lip are tokens



of marriage among the Kaffitscho women in Abyssinia. Roesicke mentions smears of chalk or white fluid as signs of mourning among the natives of the stretch above Tambunum on the banks of the Sepik in New Guinea.

But, as a rule, paint is a cosmetic among primitive peoples: that is, it is used in order to attract and adorn. The Andamanese smear their faces and



FIG. 170.—Cashibo woman from Peru with painted face, nose ring and lip plug. (Photo, G. Hübner.)

sometimes limbs and bodies as well with broad white streaks, as shown in the Fig. 167, from an original in the possession of the Anthropological Society of Berlin.

The same is the case with the painted eyebrows and eyelids of many Asiatic women. Vámbéry reports that among the Crimean Tatars, henna (*Lawsonia inermis*) was even more popular than in Turkey, Persia and the Caucasus. The



women rub it into their eyebrows, finger nails, palms and necks, and even tint the glossy black of their hair with its red shimmer. This was the custom among the Scythians, according to Herodotus, for the women made themselves cosmetics of powdered cedar and incense. Unfortunately, the smell of henna is offensive to Europeans.

It is possible that there is an allusion to henna dye in the Song of Solomon: "Thine head upon thee is like Carmel, and the hair of thine head like purple."

The Javanese and other peoples of the Malay Archipelago stain their teeth black and file them. They despise the white teeth of European women: "just



FIG. 171.—Congo women painting their faces. (After Kossmann-Weiss.)

like a dog's." And Mondière says that the Annamite women of Cochin China not only blacken their teeth by chewing betel nut, but also by the deliberate application of certain drugs. He informs us that customs here have changed and extended their scope, for it was formerly only from the date of her first menstrual period that the Annamite girl began to blacken her teeth; but now from the date of her first sexual intercourse, that is to say, on the average, three years earlier (*cf.* Figs. 169–172).

Of course ritual, ceremonial, or cosmetic paint is not confined to women and girls. Among many tribes men make far more use of this habit, but probably very rarely for purposes of decoration, but to appal their enemies in battle, and both devotees and demons in magical practices. So full war paint is generally worn with special costumes in battle, at sacrifices and at *dances*.



### 3. TATTOOING

Tattooing is a more intensive form of adornment than paint, for the designs are not smeared on to the skin but indelibly stamped into it. The term tattoo (Polynesian *tatau*) means originally, "right," "straight" or "skilled." The first European said to hear and use it was Captain Cook.

As a rule—to which there are significant exceptions (*e.g.*, the Ainu, who tattoo women only)—wherever the custom of tattooing prevails, it is common to both

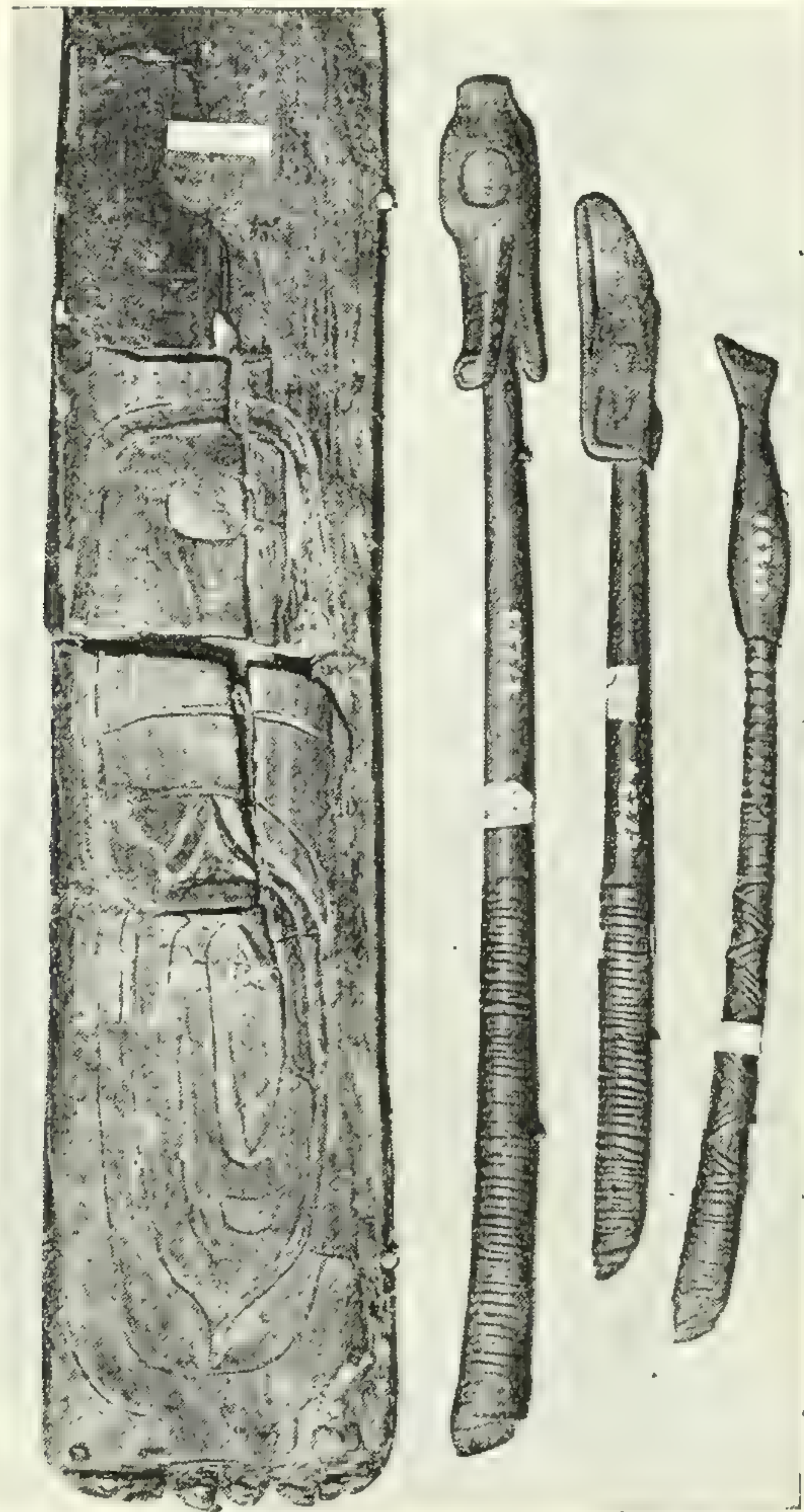


FIG. 172.—Instruments for painting, Tlingit, N.W. America. (Mus. f. Völkerk., Dresden.)

sexes. But the patterns and positions differ markedly in men and women respectively. Thus Fr. W. Schmidt recounts the existence of two quite separate groups of stripe-tattooing among South American Indians. In one group both sexes are tattooed: this is the case in Peru among the Caraque, and the Cueva, Guarauno, Dessana, Passe, Apiaca, Parexi, Mundrucu, Caraya, Juri, Kustenau, Bakāiri, Choroti and Mokobi. But among the Arawak of Dutch Guiana, the Arecuna, Tapirape, Guarayo, Chirignano, Matakō, Tapiete, Ashluslay, Toba, Cadiuco, Mbayá and Charca, only the women are tattooed. We may regard the custom as often decorative in origin and intention; but the special directions and applications vary very much. According to Berchon the natives of Tahiti tattooed the vulva and



exterior genital region and the same is true of the Ponape Island girls (Caroline Group) according to Finsch. Moreover, above all, tattooing is part of the discipline

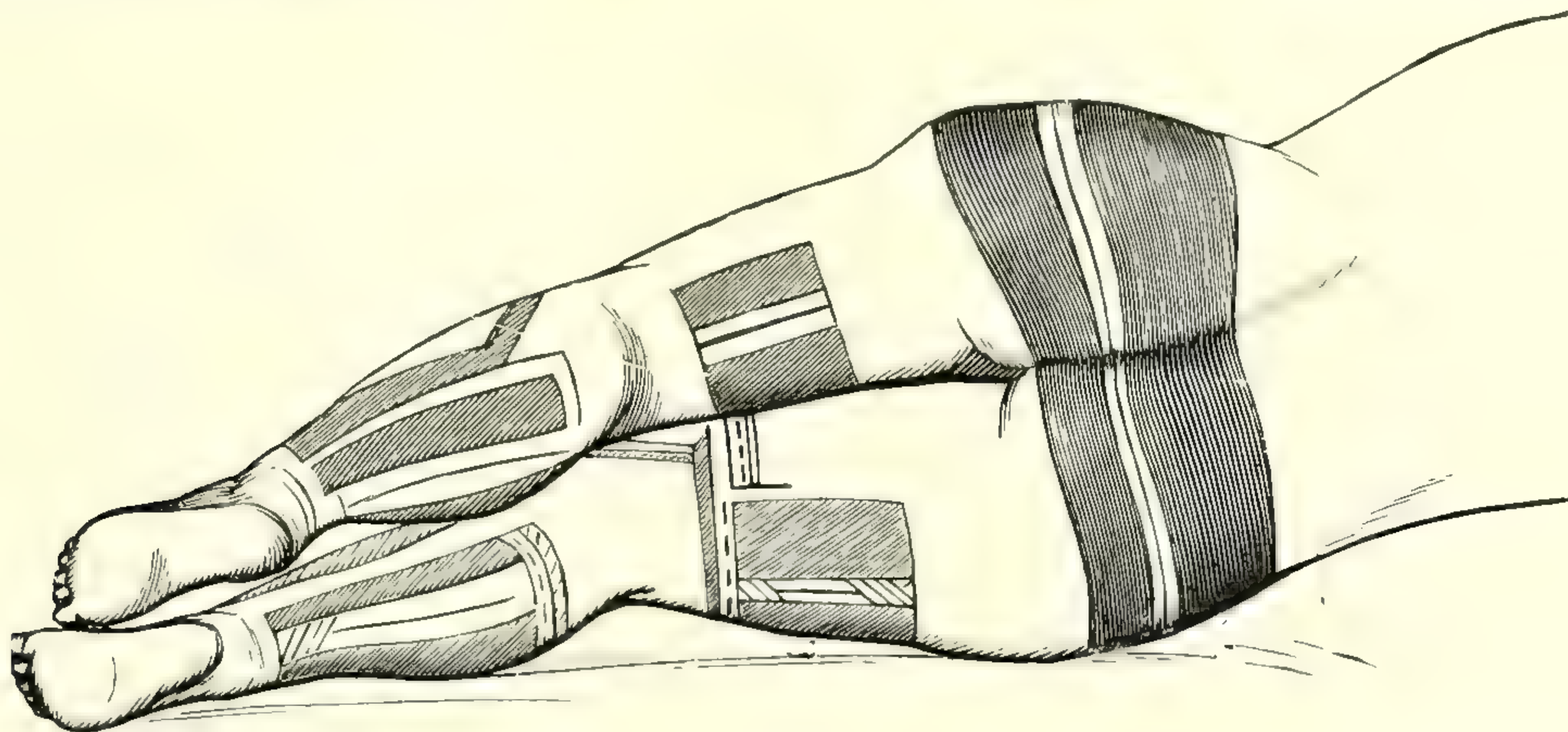


FIG. 173.—Tattooed Ponape woman. (After Finsch.)

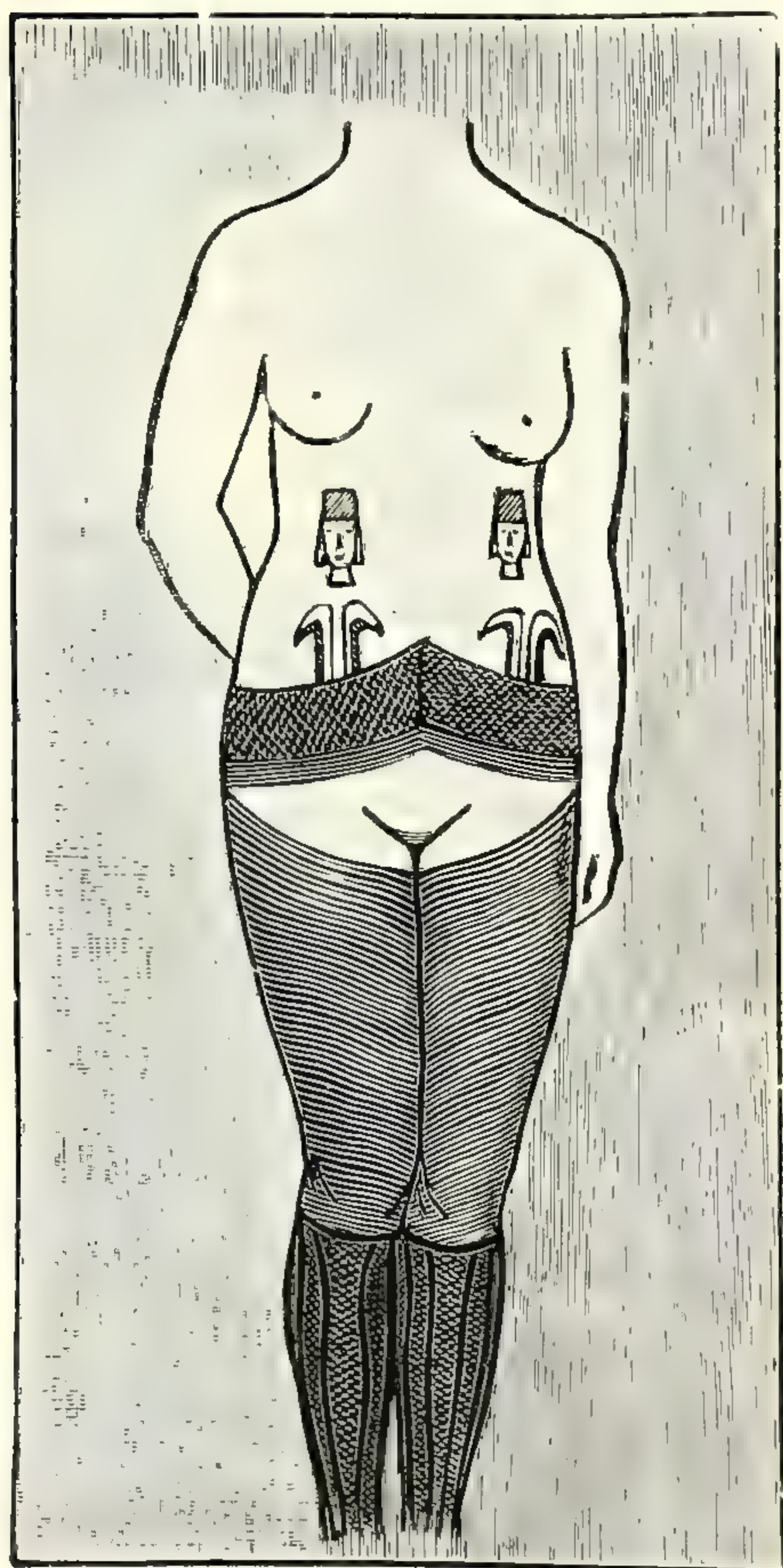


FIG. 174.—Tattooed Easter Island woman (front). (After Thomson.)

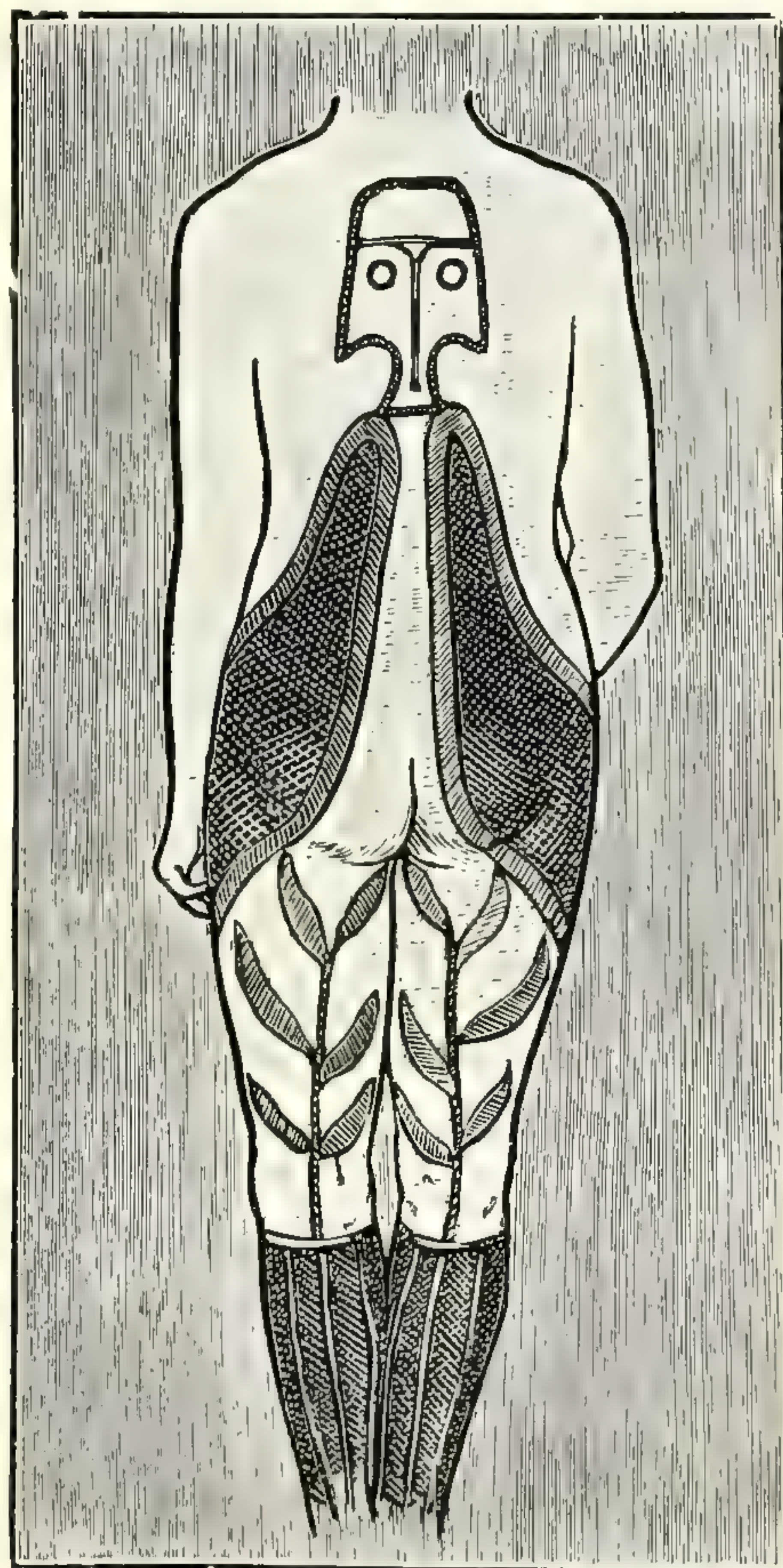


FIG. 175.—Tattooed Easter Island woman (back). (After Thomson.)

and ceremonies connected with puberty in many races. In his fine monograph, Joest has collected several illustrative examples. As an example of the most usual areas for tattooing we may cite the Ponape woman shown in Fig. 173. But there are exceptions to this rule.



W. J. Thomson has an illustration showing the art of tattoo on an Easter Island woman (Figs. 174, 175). The designs are very curious and exhibit a high degree of skill in execution. The same may be said of the Nukumanu (Niumanno) Island woman's tattoo designs as shown in an illustration supplied by Parkinson.

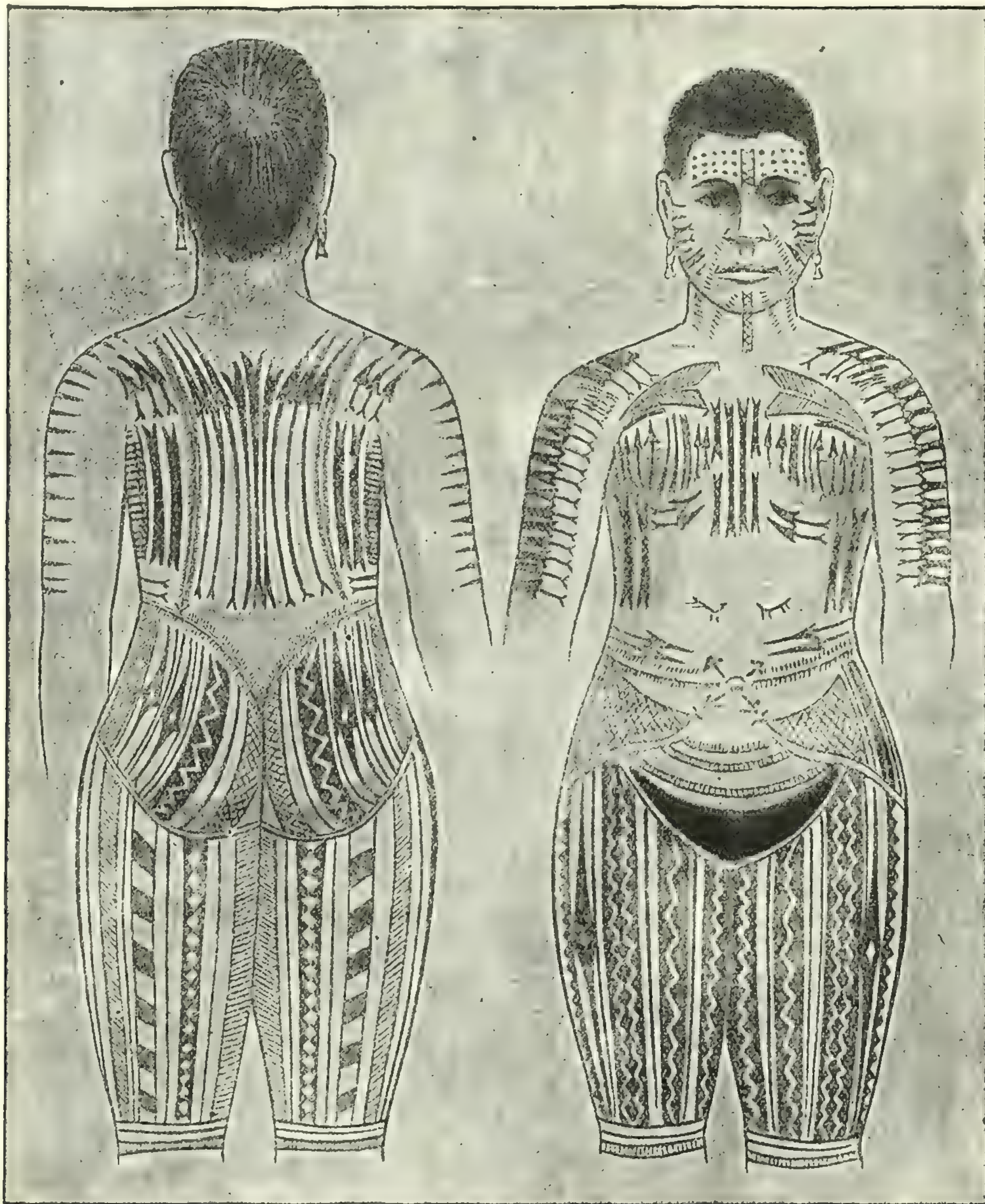


FIG. 176.—Tattooed woman from Nukumanu. (After Parkinson.)

Hardly any part of her body has been omitted: as a technical specimen she is a masterpiece. It may be added, incidentally, that even for European eyes, profuse tattoo marks alter and diminish the effect of primitive nudity.

Often primitive peoples themselves have ceased to remember what their tattoo marks mean. Thus in the Fiji Islands, according to Tylor, only women are tattooed and on the neighbouring Tongas, only men. A Tongan was sent to the Viti Islands



to find out their rules and procedure in this matter. During his voyage home he repeated over and over to himself, "one must tattoo the women but not the men." Running to his home, he fell and forgot the formula ! So that when he rejoined his people he proclaimed : " One must tattoo the men but not the women." And so it was ! Polynesian logic is quite satisfied with this explanation, for a similar legend is current in Samoa as well.

On the Island Amani Oshima, which belongs to the Liu Kiu group, tattooing is customary among women only, and it is confined to the backs of the hands (Fig. 177). " The patterns are always the same but no special significance is attributed to them, and there is a definite tradition that they were brought into the island from Okinawa. . . . The colour used is indigo blue. The custom has been forbidden for some time by the Japanese Government on these islands, as in Japan" (Döderlein : Hambly).

A Hindu author, Kedarnath Basu, has stated that both tattooing and the deformation of the ears by means of wooden splints and bars have greatly diminished among his countrywomen since the end of the nineteenth century. He claims that tattooing is not mentioned in Sanskrit literature and may therefore be of foreign origin.

Abyssinian women, according to Bieber,<sup>3</sup> tattoo their necks "at marriageable age." The skilled operator is called *nekash* ; the process, "*je anget nekassat*." Petroleum is rubbed into the skin and the patterns pricked with needles.

Both Finsch<sup>1</sup> and Kubary are of opinion that on Ponape tattooing is now a form of decoration only, with no reference to rank, occupation or religious ritual. On the Gilbert and Marshall Islands the custom is becoming extinct, but on the Ponape it still flourishes and both tracing and pricking are technically fine.

The voyage of the *Novara* brought to our knowledge a song of the New Zealand Maori, which Friedrich Müller has rendered into German. He writes : " Among the women, the lips and the curve from the corners of the mouths to the chin are tattooed always and the arms and breast sometimes, but not invariably. As the girl is tattooed, her playfellows sing as follows :

" Lie down my daughter to be painted,  
 So that thy chin may be adorned !  
 So that, when thou enterest a strange house,  
 They shall not say : ' Whence comes this ugly woman ? '  
 So that thou shalt be fair and seemly,  
 And when thou comest to the feast,  
 They shall not say : ' Whence comes this scarlet-lipped woman ? '  
 Come, suffer us to tattoo thee  
 And make thee lovely !  
 So that the slaves shall not say as thou passest by :  
 ' Whence comes this red-chinned woman ? '  
 We tattoo thee, we adorn thee

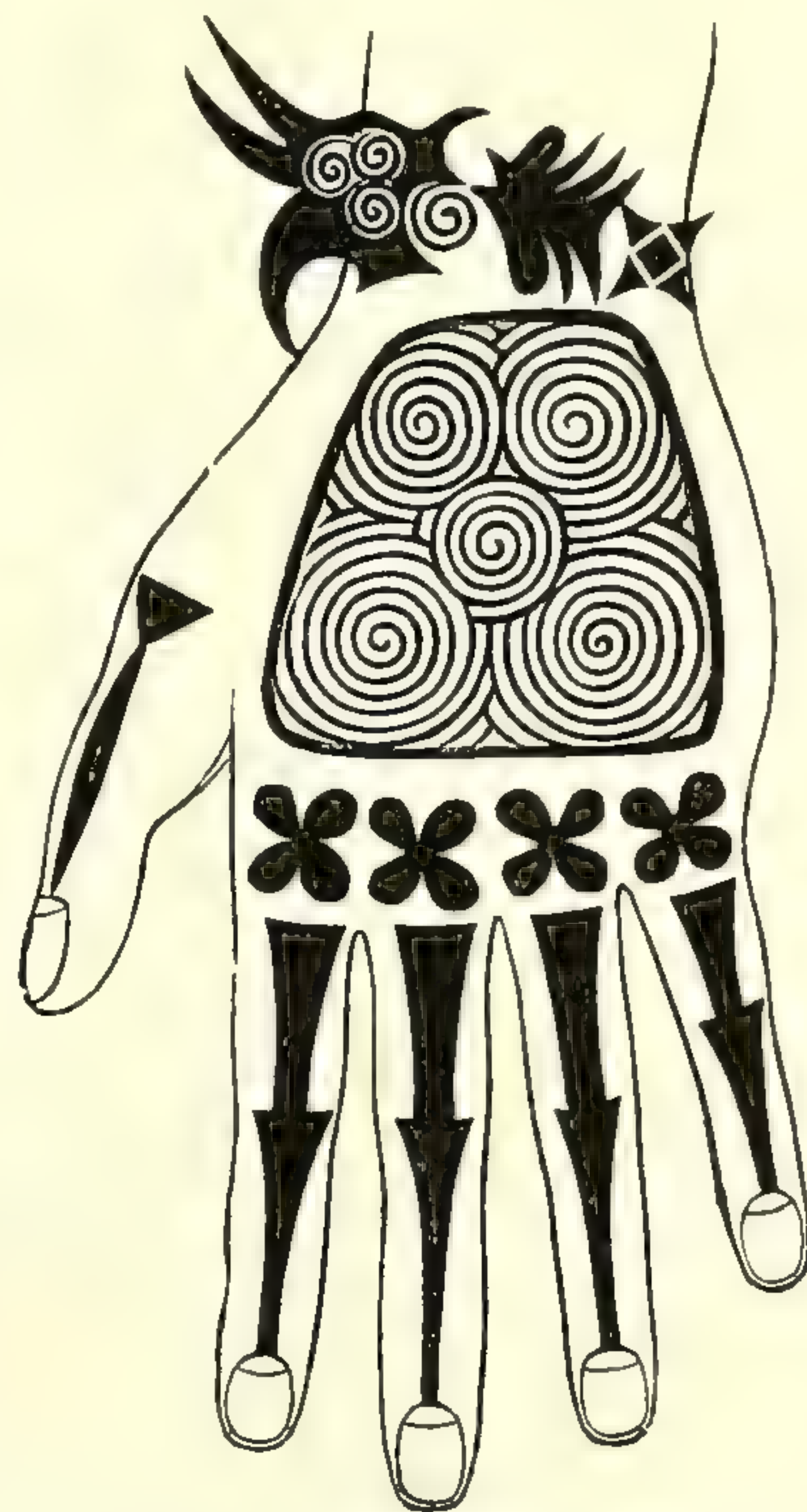


FIG. 177.—Tattooed hand of a woman from the Liu Kiu Islands. (After Döderlein.)





FIG. 178.—Maori woman showing tattooing of lips.



By the spirit of Hine-te-iwa-iwa  
 So that the shore spirit  
 May be sent from Rangi  
 To the depths of the sea,  
 To the foaming wave !  
 Thy beauty shines as the Heavens,  
 As the stars, Pahatiti, Ruatapu, Rongonui and Kahukura.  
 Thou art more lovely  
 Than Uetonga and Tamarerteti  
 Or the holy shade of Reretoro  
 The shore spirit shall be sent by Rangi  
 To the depths of the sea :  
 To the foaming wave !  
 Leave the flatt'ers and babes behind thee ;  
 Bid them farewell !  
 Pass onwards as clouds that sail,  
 Over the Rankawa hills,  
 And leave them to weep ! But I——  
 I am Rangi and Papa !  
 Behold my task is accomplished ! ”

The Maori are very expert in the art of tattooing, and Robley has written a treatise on it which was published in 1896.

On many South Sea Islands the instruments for tattooing are small hooks with slender blades of bone or shell and serrated edges. These are pressed against the skin and driven in with slight hammer taps after being smeared with the colouring preparation in use, as shown in Figs. 180–183. The Japanese and Burmese use needles, sometimes in rows, like the teeth of a comb.

Strzoda states that the Li of Hainan reserve tattooing as a privilege for married women, whereas, on Formosa, men also are tattooed, though in less ornate designs.

We have already referred to the ceremonial facial tattooing of the Li girls at marriage : Montano reports a similar custom among the natives of West Mindanao in the Philippines around Davao Bay. The tattooed persons are children between five and six years old and the operators are their mothers, who wish to have reliable and indelible means of recognising them if they are kidnapped by fraud or force, as very often happens.

Ehrenreich describes the custom of the Caraya Indians of South America, who tattoo at puberty with special rites. He says that the designs are simply tribal insignia (Fig. 184) and are applied to the cheeks in both sexes alike. They are blue rings from 10 to 15 mm. in diameter set closely below the lower eye socket rim. The design is traced, cut in with a sharp stone and staunched with cotton waste and the juice of the Genipapo plant.

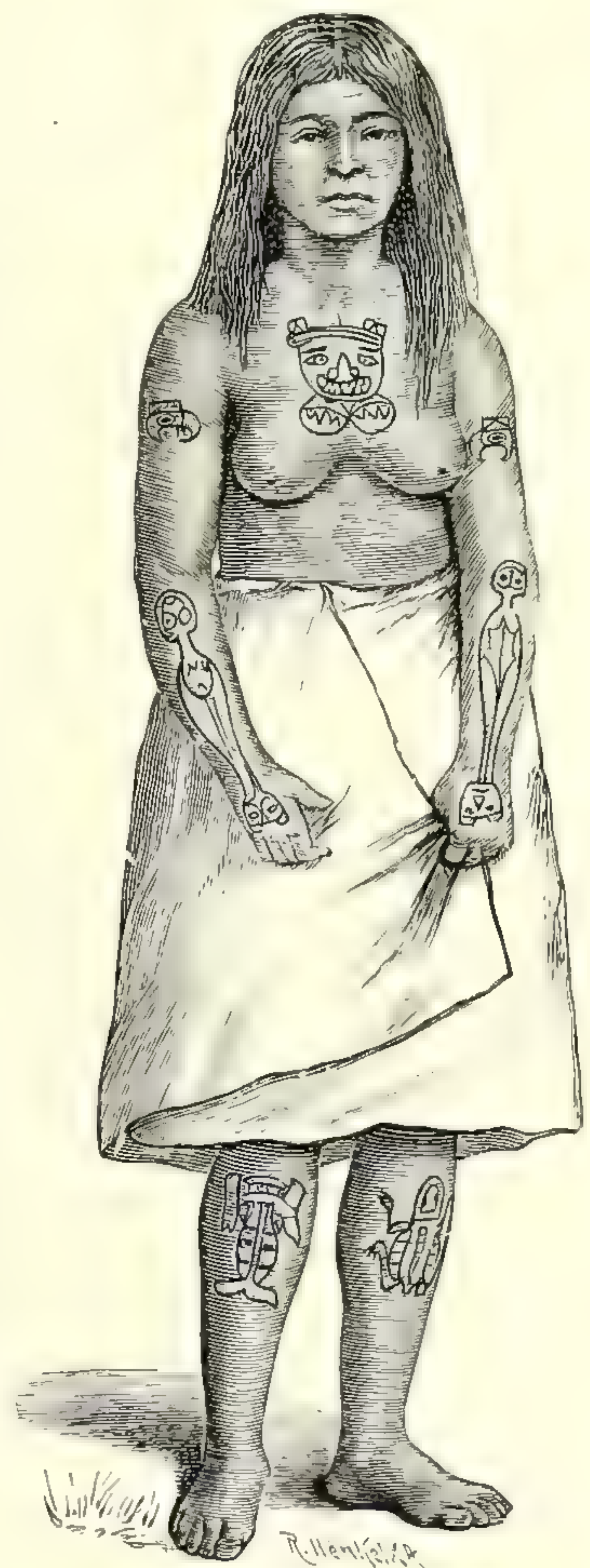


FIG. 179.—Haida woman.  
 (After Swan.)



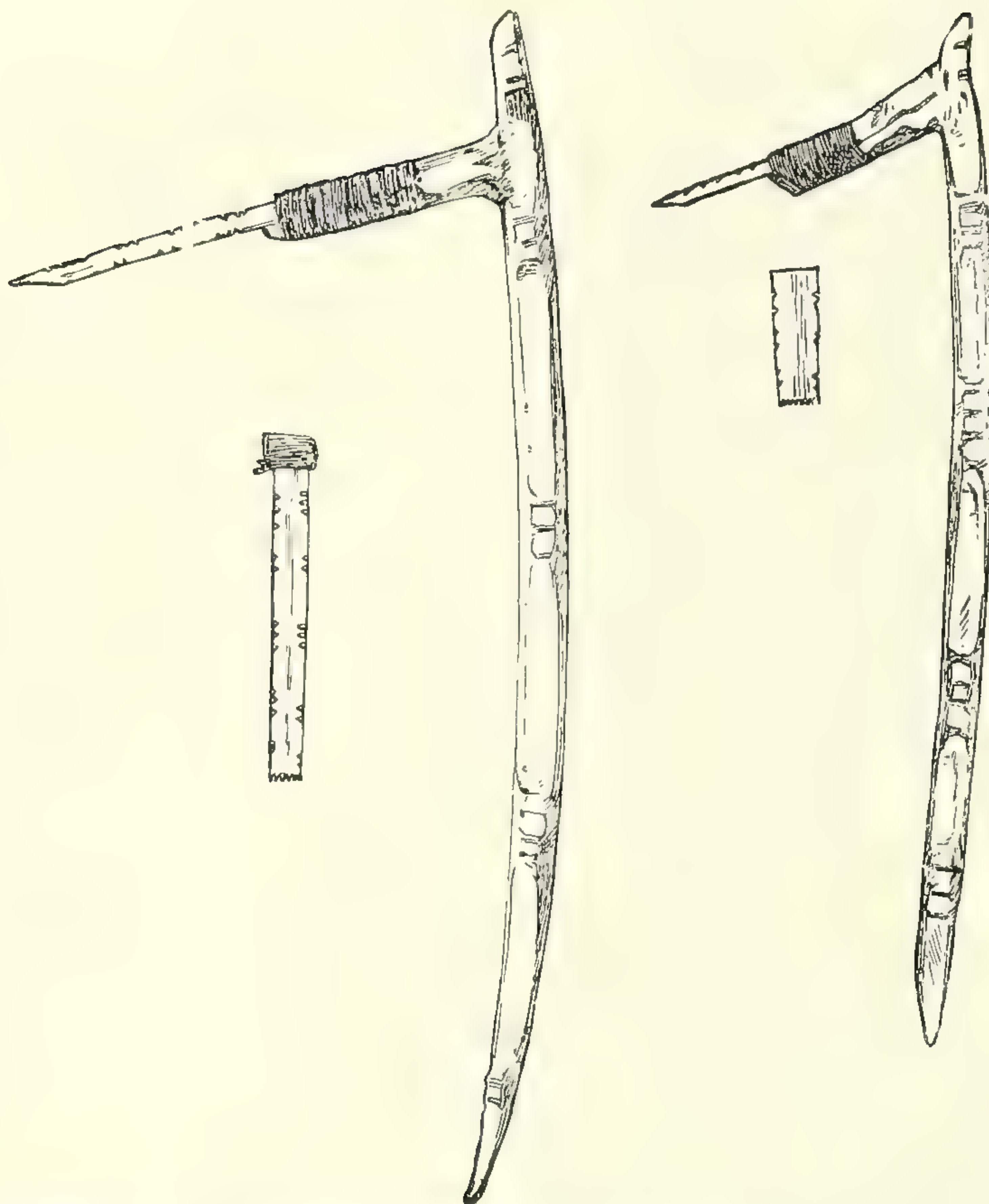


FIG. 180.—Instruments for Tattooing (two-thirds natural size), New Zealand. (After Joest.)

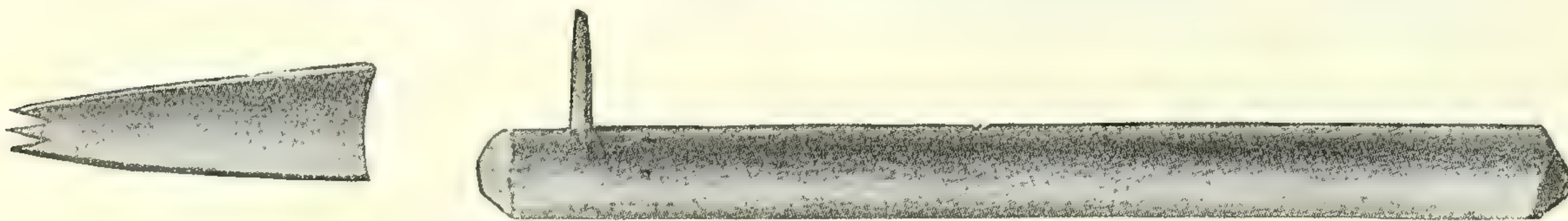


FIG. 181.—Tattooing instrument. (*Archiv. f. Ethn.*, 1897.)



FIG. 182.—Tattooing, in Samoa. (Mus. f. Völkerk., Dresden.)



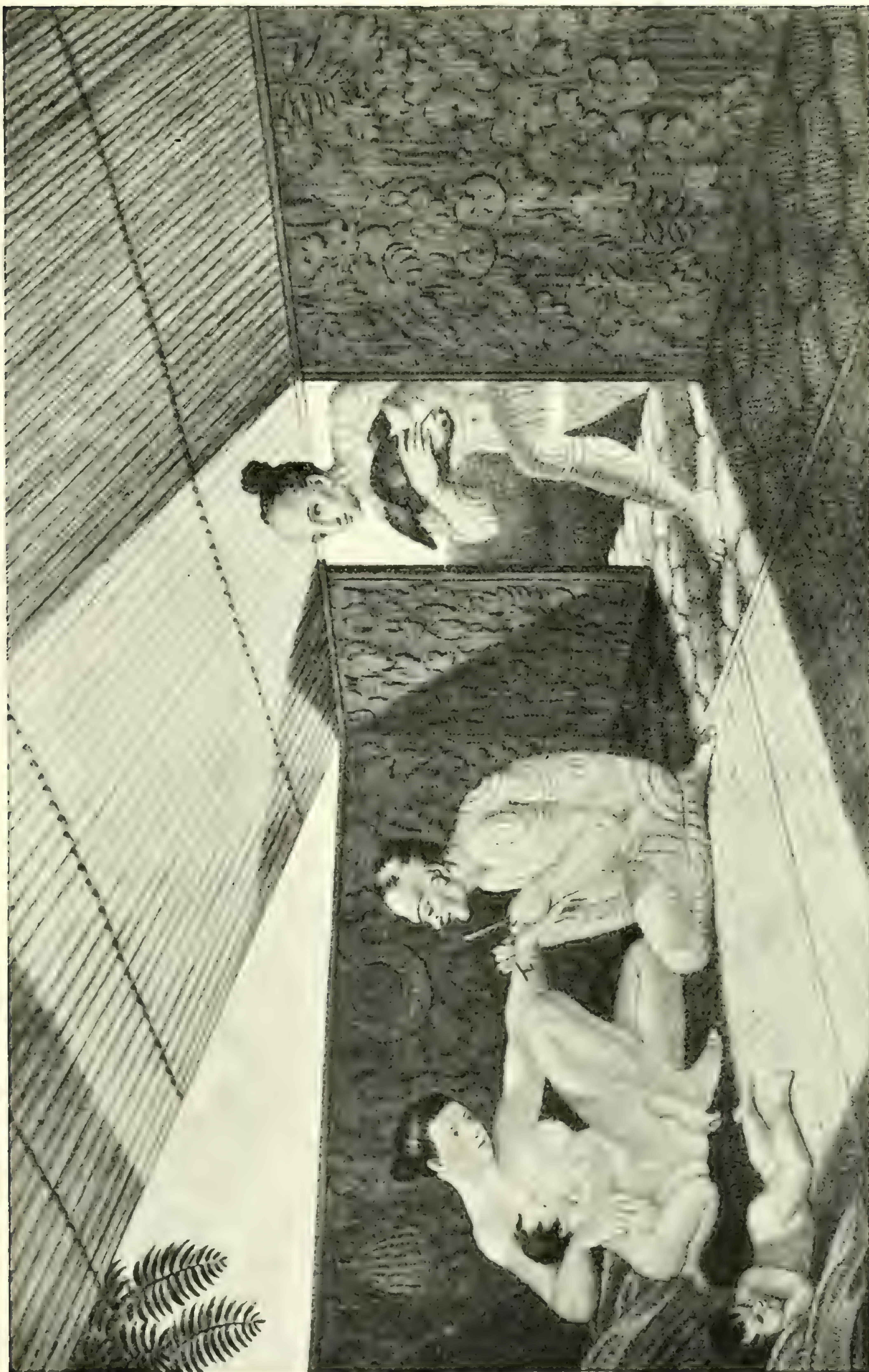


FIG. 183.—Tattooing in Nukahiva. (After Langsdorff.)



The Haida Indians of Queen Charlotte Islands, off the coast of British Columbia, have their family totems tattooed just above and between the breasts, on the arms above the elbow, and backs of the hands, and just below the knees (Fig. 179.) Swan observed that during their tribal feasts the Haida men were quite naked and the women clothed only in a kirtle which reached from waist to knees. So the totem tattoo marks were visible and proclaimed their rank and lineage to all. The woman whose picture—here reproduced—we owe to Swan, has the head and forefeet of the beaver on her bosom, the head of the eagle or “thunder bird” on each arm above the elbow, the skate on each forearm, and the frog and sculpin on either leg respectively; in short, her whole family tree.

Among many South Sea Island tribes, tattoo marks are a privilege of the noble and freeborn; slaves may not be tattooed. There is a very interesting passage on this topic in Charles Darwin’s “Journal of Researches” which also suggests that tattoo marks are perhaps meant to conceal the wrinkles of age.

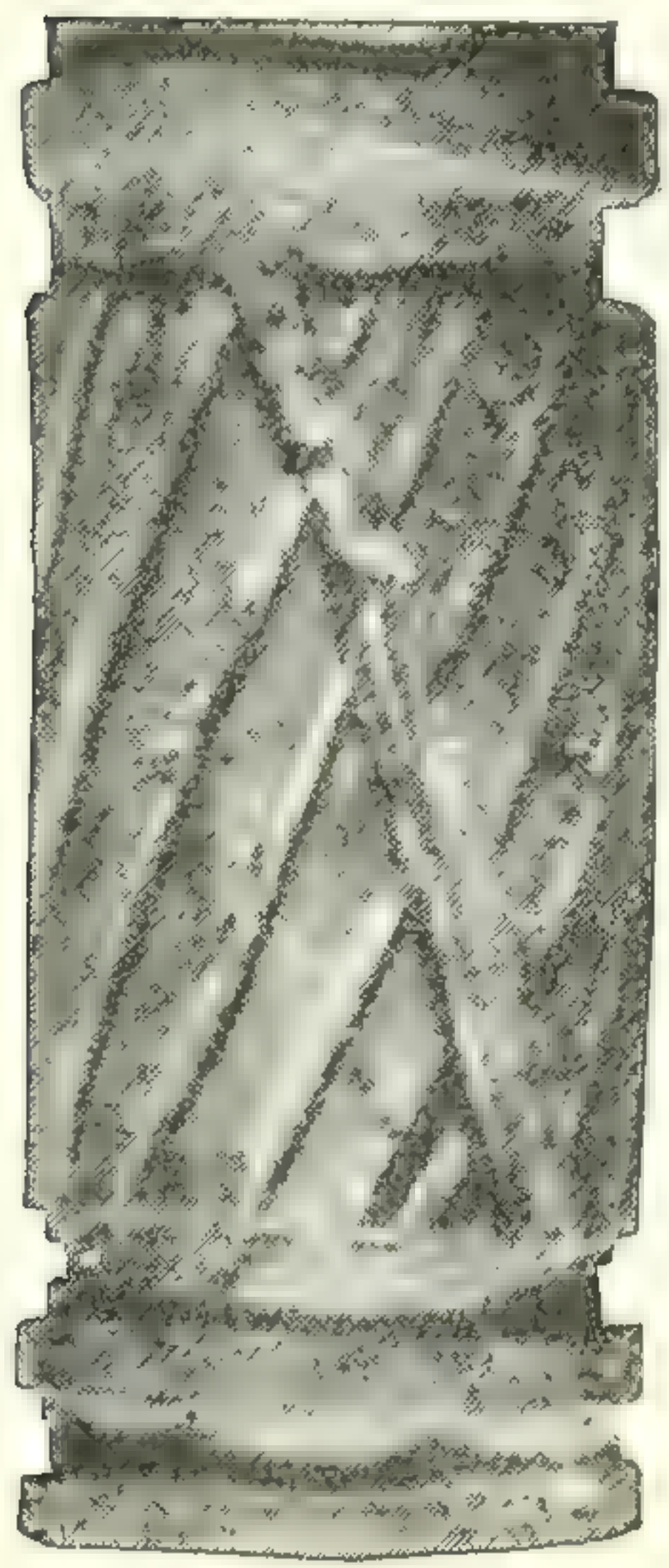


FIG. 184.—Roller die used in body painting, South America. (After Koch-Grünberg.)

Among the Ainu of Yezo, according to v. Brandt, women have blue beard-like tattoo marks round their mouths; these disfigurements are begun at about seven years of age and gradually increased and extended. To Europeans they are extremely ugly.

There is an elaborate tattoo ritual on the Pelew Islands, according to Kubary.<sup>3</sup> The little girls tattoo all sorts of patterns on each other’s legs, which are then covered on their hind surface from the ankles to the gluteocrural fold with elaborate patterns. The front of the limbs and the buttocks themselves are left untattooed. Then, with puberty comes the ritual tattooing of the genital region. This is a narrow line on both sides of the vulva and extending to the anus. The hitherto untattooed portions of the lower limbs may also be covered with a network of stripes which resemble black tights.

There are similar puberal and marital tattooings among the women of Toba in the Gran Chaco, in Tahiti, and among the South American Guarani and the Kabyle of Northern Africa. According to Bertherand, the Kabyle girls have a small blue tattoo mark in the shape of a cross on the forehead between the eyebrows, on the cheek, or above one nostril. But these are obliterated before marriage by the “Taleb” who uses “*djer*” (chalk) or “*sabounnakhal*” (black soap) for the purpose.

Near Port Moresby in New Guinea, in New Ireland at Siaru and in Formosa similar facial tattoo marks are given women on betrothal or marriage (Fig. 186). But those Formosan women who have begun to assimilate Chinese habits and are known as Pepo, refuse these tattooings. We shall refer, later, to the significance of painful tattooing as a form of ordeal, or test of endurance in the ceremonies of puberty.

Avebury has recorded the pain inseparable from adult tattooing in the Fiji Islands, where it was considered a “religious duty.” N. A. E. v. Nordenskiöld<sup>2</sup> states that the primitive Eskimo women are profusely tattooed in designs somewhat resembling those usual among the Chukchee, with lampblack, fish-oil and graphite (Figs. 187, 188, etc.), and also comments on the pain experienced in the operation.





FIG. 185.—Tattooed Bedouin girl showing cheek marks. (Photoglob, Zurich.)



Tattooing is not wholly unknown in Europe,\* but is somewhat confined to special groups or trades. It is common among sailors, especially of the mercantile marine, and among soldiers. It is also curiously popular among habitual criminals, in spite of the obvious facilities it gives to police investigation and detection. Almost the only European women who undergo or allow tattooing at the present time are certain categories of prostitutes: they use this ancient craft, not as a decoration, but for commemoration, and turn their bodies into a sort of album with the initials,



FIG. 186.—Tattooed married women from Formosa. (Anthrop. Ges., Berlin.)

portraits or tokens of special persons. But, apparently, there are marked national or racial differences in this respect. On Baer's suggestion, Menger had the registered prostitutes of Berlin examined with a view to tattoo marks. He found only five so marked in a total of 2448 such registered women. On the other hand, Lombroso, de Amicis and Sergi, who investigated 2161 such cases in Turin, Milan and Genoa, found 36 with tattoo marks. In Paris, tattoo marks are often found on prostitutes. Parent-Du Châtelet and Baer claimed that tattoo marks on professional prostitutes were often a sign of peculiarly abandoned dispositions; although Lombroso found that there were very few indecencies (only two in the case material

\* [See Riecke.]



investigated), but generally two hearts, initials or flowers with “*pour la vie*” or some such assurance (*cf.* Figs. 189 and 190). But in Paris it was found that women homosexuals often had tattoo marks, generally the full name of their girl sweetheart, inscribed on their lower abdomen and that this was a certain proof of such habits.

Lombroso declares that individual and sporadic tattoo marks, such as those just mentioned, are a form of atavism : of regression to primitive ideas and ways.

But there is one portion of our Continent where tattoo marks are customary among women who are not professional prostitutes. This region is Bosnia and Herzegovina in Yugo-Slavia. Glück suggests that it has been introduced by the Roman Catholic priesthood in order to distinguish members of their flock from the

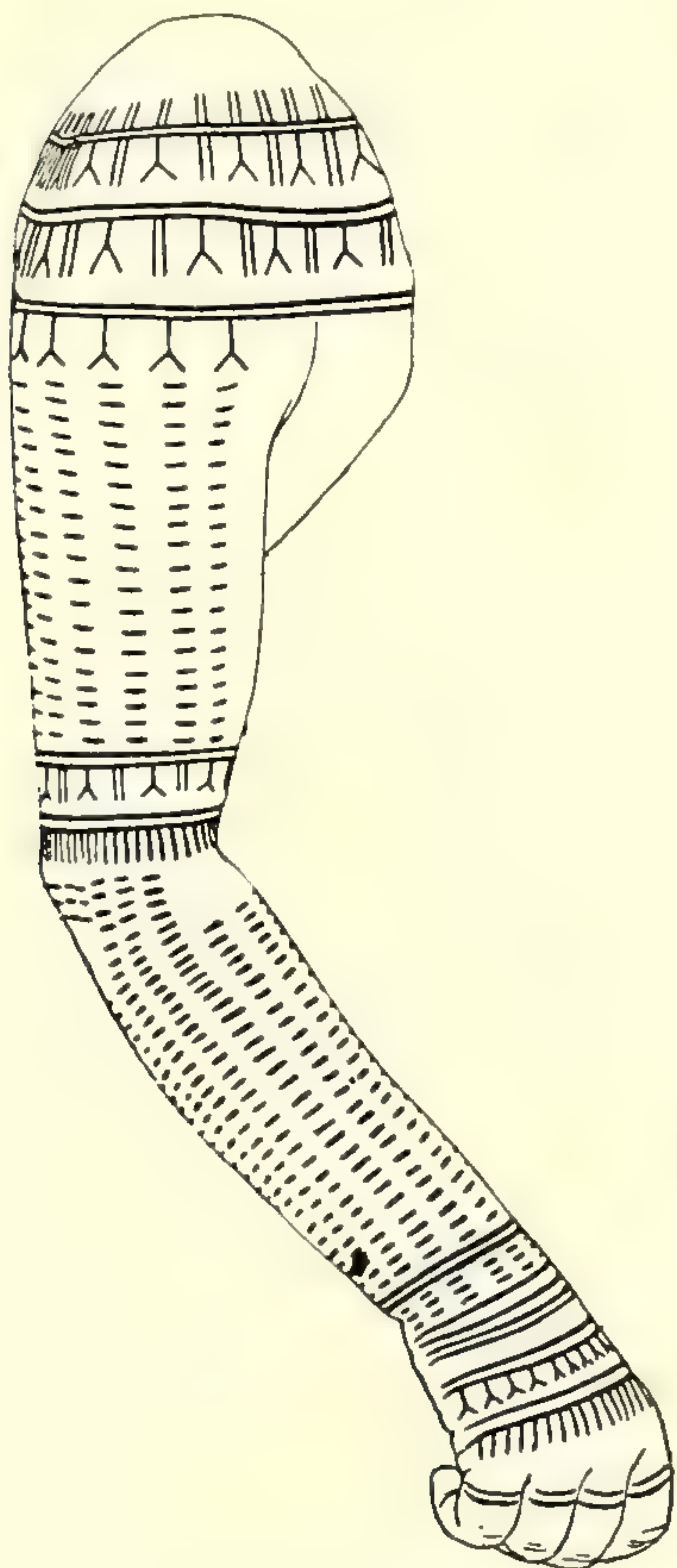


FIG. 187.—Arm tattooing,  
Central Eskimo.

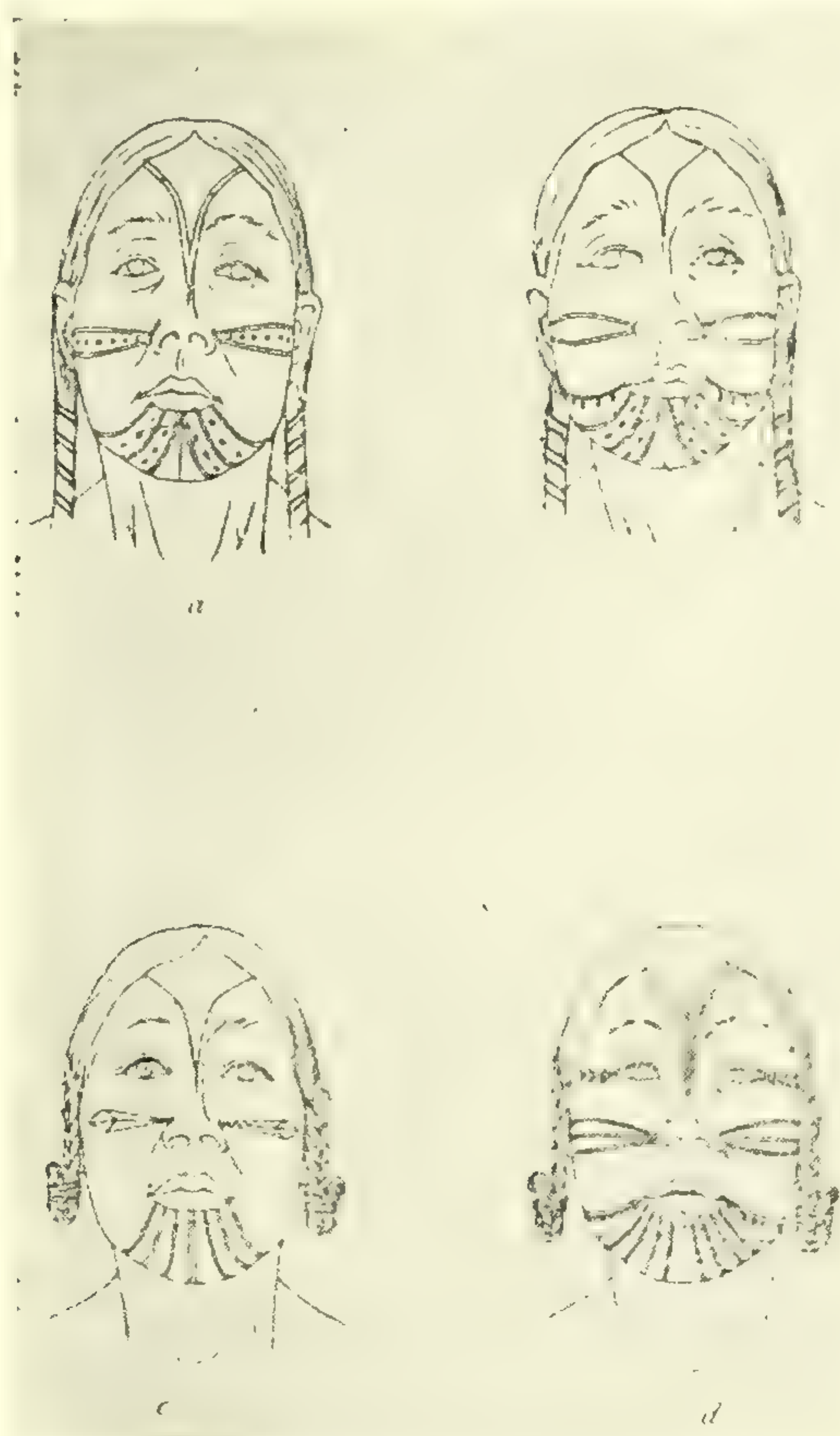


FIG. 188.—Face tattooing.

Greek Orthodox, Moslems and Hebrews, for only Roman-Catholics are so marked, and both men and women, though the latter more often. The designs are always some form of cross and they are marked on visible portions of the body : the back of the hand, the forearm, or just below the collar bone (Fig. 191). The ceremony takes place after Divine Service and is performed with pine splinters and a mixture of resin and soot.

Truhelka has also investigated this interesting custom very fully in an illustrated monograph. He found that there were other designs and symbols besides the crosses (sidereal and agricultural) and that the ceremony nearly always takes place on March 19th, the Feast of St. Joseph, *i.e.*, on the Eve of the Vernal Equinox ! He therefore concludes that it is a pagan survival, though he confirms the fact that it is almost exclusively Roman Catholic in Bosnia-Herzegovina to-day. The age at which



it is performed is from 13 to 16, *i.e.*, at normal European puberty. In 1895 M. Bartels was witness of a Divine Service at which many tattooed women were present at Jaice in Bosnia. The custom also exists in Albania. Truhelka's view appears the more likely.

Tattooing is also used among Mohammedans, *e.g.*, Kurds, for magico-therapeutic purposes. R. K. Neumann has given a most curious case illustration of this.



FIG. 189.—Sexual tattooing on arm. (After Wulffen.)



FIG. 190.—Sexual tattooing. (After Wulffen.)

It may also apparently have been practised in prehistoric times, although it is difficult to distinguish such practices as body painting, etc., from tattooing in the decorated figurines (*cf.* Hoernes). The clay female figure reproduced in Fig. 195, found in a tomb in Thrace, may exhibit signs of tattoo marks as well as of scarifying or cicatrisation, which we will now briefly consider.

#### 4. SCARIFICATION

Ritual scars are even more durable than tattoo marks ; just as tattoo marks excel paint in this respect, tattooing in itself often causes such inflammation that





FIG. 191.—Tattooed woman from Lasvatale.



FIG. 192.—Eskimo women with their children, from King's Island, Alaska. (After Friedenthal.)





FIG. 193.—Tattooed Chuukee woman.



FIG. 194.—Leg-tattooing on woman from Samoa. (Mus. f. Völkerk., Dresden.)



ridged scars resembling keloids appear. The women of Darfur and Kordofan rub salt into fresh tattoo wounds in order to produce such scars, which are considered attractions. Finsch saw similar scars on the native women of New Britain in the South Seas on thighs and buttocks. The necessary incisions are very painful and take months to heal. The Gilbert Island girls often inflict burns and scalds on themselves, for the scars are considered both beautiful in themselves and a test of high courage according to Finsch.<sup>4</sup>

Avebury and Eyre described the painful scraping and scarring of the backs of the young girls in the Australian aboriginal tribes on the Murray River with sharp



FIG. 195.—Clay figurine from Thrace. (After Hoernes.)

shells or flints. The results of this procedure are shown on the back of a young woman of North Queensland, Fig. 196, and Fig. 197, on another girl's upper arm.

The Solomon Island women carve and scrape their whole bodies with sharp shells, often causing abscesses and even ulcers. But if the operation is successful the results are considered supreme charms, according to Parkinson, and greatly raise the woman's bride-price. Jourdran mentions the highly ornate incised patterns on the lower abdomen, pelvis and sacral region of a Malagasy woman ("*femme de Betsiléo*") which had been executed and endured solely in order to please her husband. There were eight rows of superposed incisions; the topmost row had 104 single strokes and the remaining seven rows 82 each.

A missionary records that he was told by a Magandja woman (Africa), whose



body dripped with blood from fresh cuts into old tattoo marks (done in order to cause protuberant scars), that when they healed she would be the greatest beauty in her country. This woman's scars had special names according to their distribution and position.

The incisions on back, arms and upper portion of the thorax are shown clearly in the photographs of three native girls from South Africa (Figs. 198, 200, 201).



FIG. 196.—Australian woman with scarification. (Photo, Günther, Berlin.)

Dahomey women have scars on the sacrum and loins; and the Niam Niam girls show large incisions above their breasts and very delicate intricate work on the abdomen (Figs. 199 and 202).

The peoples of Africa have such a liking for these scarifications that they adorn their wooden figures with them (*cf.* the figure of a woman from Urua (Fig. 203) in the Berlin Museum for Ethnology).

The same habit of scarification has survived among the Bush negresses of



Surinam, according to Crevaux,<sup>2</sup> who describes the peculiar decoration around the navel.

The practice of scarification seems also peculiar to coloured races and, indeed, mere tattoo marks would not always be strongly visible on a bronze skin. And the primary impulse seems to be the wish to beautify : to please either the eye or the



FIG. 197.—Australian woman with scarified arm. (Photo, Günther, Berlin.)

sense of touch. For Fülleborn,<sup>2</sup> in his inquiries among the natives of South-east Africa as to the reason why their women—especially in the Wayao and Makua tribes—were deeply incised and tattooed in the lower half of their bodies, received an illuminating answer : “ It was pleasanter for a man to stroke and feel an uneven surface than a smooth one.” Thus there is apparently not only an æsthetic or decorative, but a profounder and more primitive sexual factor at work here.





FIG. 198.—Natal girl with scarification. (Joest Coll.)

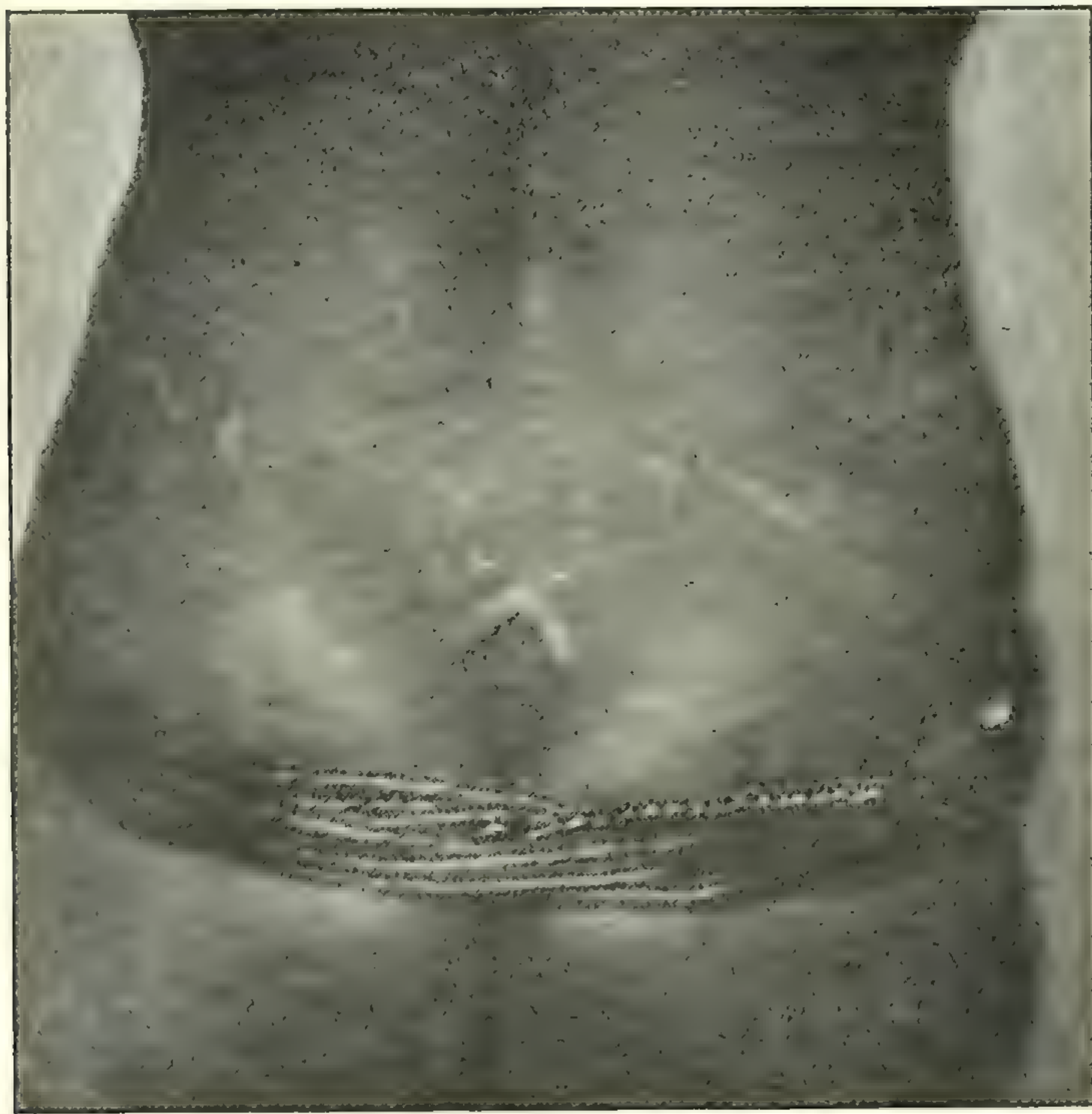


FIG. 199.—Dahomey girl with scars on sacrum. (Photo, F. Görke.)

Moreover, there is another element as well: to test and prove personal pluck, as in the Gilbert Island girls mentioned above.

Crevaux<sup>2</sup> also found cases among Indian women in the north-east of South



America, where incisions across the thighs signified the number of children born, or, rather, sons.

Scarification may also be a token of mourning and bereavement. Thus Spencer and Gillen<sup>1</sup> have testified that on the deaths of their kinsmen the aboriginal

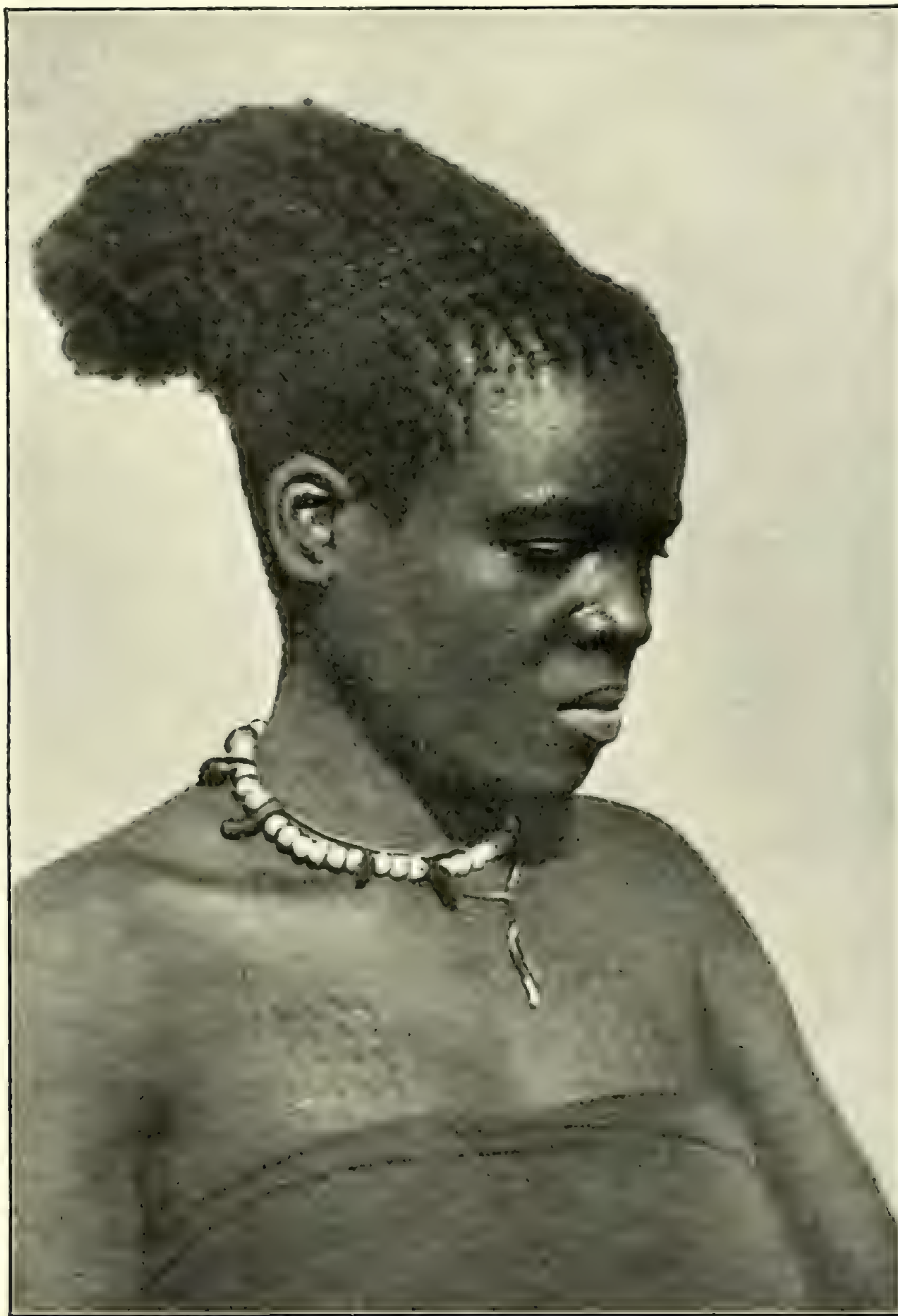


FIG. 200.—Girl from Natal.

Australian women often inflict wounds on themselves which leave permanent scars. In New Zealand, among the Maori, these scars are known as *tangi*, or "dirges for the dead," according to Dieffenbach.<sup>2</sup>

Scars due to burns (branding) are intentionally inflicted in many cults and customs of the peoples of Hindustan, though mainly on men. But the girls who are consecrated to the temple service in the Bellary region are branded with hot brass instruments. One token or mark, the Chakra token, is on the right shoulder,



the second or Chanka token, on the left, and third, also Chakra\*, just over the right breast (*cf.* Thurston).

### 5. HEAD DEFORMATION AND FACIAL MUTILATIONS

The practice of artificial cranial deformation is applied to children from earliest infancy, either by instruments or by tight head-dresses. A well-known case of



FIG. 201.—Koranna woman. (After Buschan.)

this practice was the custom of certain pre-conquest Central American peoples who pressed back the forehead diagonally from eye sockets to crown. The "Flathead" Indians preserved this custom till recently and fastened boards to their babies' heads as they were carried in their cradles on the mothers' backs.

\* Chakra means "wheel," Chanka "snail—shell."



Cranial deformation need not be treated at any great length here, however, as in almost every race that practises the custom it is applied to both boy and girl babies. There are a few exceptions. De Crespigny has stated that the Malanau, a tribe of Sarawak, deform girls' heads only. Roth says that the appliance they use is called "*tadal*": it is attached when the baby is a fortnight old and kept in place till the fourth month, and the pressure is gradually tightened. De Crespigny says the appliance is called "*jah*," and is cushioned with the thick leaves of a species



FIG. 202.—Niam-Niam girls. (Anthrop. Ges., Berlin.)



FIG. 203.—Carved wooden female figure from Urua, Central Africa. (Mus. f. Völkerk., Berlin.)

of water-lily. These are changed daily. Crocker, who has also recorded this custom, pays a tribute to the incessant care with which the mothers change the appliance and try to give the little sufferers relief. Sometimes nasal injuries and death ensue, but—a flattened skull is considered beautiful by the Malanau. He says that the custom is not entirely confined to girls, but boys are sometimes treated.

In New Britain there is also systematic cranial deformation, as Reche<sup>2</sup> has recorded. But he says that the mental faculties do not seem impaired by the practice. The children of chieftains are more intensively deformed than the common people, and in a recent monograph Dingwall has dealt with the whole question in detail.



The most widely practised facial mutilation is that on the ears. Even in "civilised" countries they are often pierced and adorned with jewels and studs. In certain country districts, for instance in the Mark Brandenburg (Prussia), this is considered indispensable, and of benefit to the eyesight, "drawing off bad humours." It is even recommended as a method for healing eyes which have



[ FIG. 204.—Ahong girl (Cambodia), showing heavy ear-rings and consequent mutilation of the lobe.  
(Naturhist. Mus., Wien.)

already suffered from styes or soreness.\* An ear-ring on the left side is reputed to be the more efficacious.

In some races the piercing of the lobe of the ear is made the occasion of a special festival.

The shape and material of these ornaments varies as greatly among primitive as among civilised peoples (Fig. 204). It would be possible to give a monograph to this subject alone. Sometimes the rings are so large that the lobe is stretched and deformed, or so heavy that they pull the whole ear out of shape. Examples of fantastic shapes are given in the picture of the Tamil girl (Fig. 207) and of the Ahong maiden from Cambodia. There is also the modification of plugging the orifice through the lobe with sticks and bars of wood, sometimes as large as clothes-pegs, as in Madagascar and Central Africa. The Korumba of the Nilghiri Hills

\* This superstition was not by any means confined to Prussia; it is found in parts of Scotland and Ireland.



use palm-leaf spirals, according to Jagor. The New Zealand Maori, on the other hand, use flowers as ear plugs.

Hagen gives an account of the elaborate procedure among the Battak women, who enlarge the hole bored through the lobe "till it will take a thumb" and place a silver ring in the gaping hole. The upper part of the ear is also pierced and adorned with tiny rings (Fig. 205).

The Basuto of the Transvaal had the habit of piercing the ear between lobe and helix, and they still are reported to do this (*cf.* Figs. 206 and 207). Joest says that the Makua girls on Mozambique also prefer several aural perforations and use



FIG. 205.—Battak. (Mus. f. Völkerk., Dresden.)

pegs larger than half-crowns in their mutilated lobes. Among races practising these mutilations the ears are often torn through with the weight of the ornaments and hang like thin strips of flesh to the shoulders. Thilenius has given a detailed description of the extraordinary procedure among the women of the Anacoretas Islands. Great rings of tortoiseshell are fastened or clipped to the ears and a strip torn off the helix so that it droops and can be used as a bracelet; or it is adorned with coconut fibre. The same custom is said to prevail in Popolo, but there it may be connected with puberty ceremonies.

Noses, as well as ears, are sometimes pierced. The Hindu women often wear little studs in one perforated nostril (Fig. 208). Both nostrils are never pierced



simultaneously and the left side is preferred. But sometimes the ornament is very heavy, a ring not a stud, and the disfigurement great. Schweinfurth<sup>1</sup> has



FIG. 206.—Woman from Kaniet, Anacoretas Islands, in festival garb, showing ear and nose decorations. (Photo, Thilenius.)

described the stiff blades of grass worn by the Bongo women of the Bahr-el-Ghazal, through the upper lip and the nostrils.

The alæ or wings of the nose are sometimes untouched, while the septum is perforated, but this custom appears to be diminishing. It still prevails among the Queensland blacks in both sexes. The ornament is a splinter of bone or wood



(Fig. 209). The Jur women of the Upper Nile often wear iron rings through the septum, or even sometimes through the gristle of the bridge of the nose, according to v. Hellwald.

Mouth and teeth also do not always escape these attentions and improvements. The lips are tattooed and the teeth filed, broken or artificially discoloured. These



FIG. 207.—Tamil girl with ear ornament. (Photo, A. W. Andrae.)

practices are more common among primitive men, but their women do not always escape.

According to Joest, certain Madagascan women file their front teeth to points like a shark's (*cf.* Fig. 210).

The Battak on Sumatra, according to Hagen, file their incisors in both jaws to points from the gums. Then (in both sexes) the pointed teeth are coloured black with lemon-resin and charcoal, and then smeared three or four times so that a deep



and permanent effect results. The tough coating also serves to stop up cavities in the teeth.

The filing custom prevails on the smaller islands between New Guinea and the Sunda Group, at least in regard to girls when they reach marriageable age.

The women of the Bongo tribe (Bahr-el-Ghazal) wear metal clips on their upper lips near the corners and thrust grass blades through the upper lip and wooden pegs through the lower.

The same custom was observed among the women of a troop of South American Indians from Guiana (supposed to be Arecuna and Arawak) who visited Europe



FIG. 208.—Hindu girls from Rajputana. (After Schweiger-Lerchenfeld.)

some years ago and proudly thrust pins and bodkins into the perforations in their lips. Two photographs of Guiana women are reproduced (Figs. 211 and 212), thanks to Dr. Max Bartels and Captain Adrian Jacobsen.

Livingstone has described the rings worn by the Magandja women through the upper lip. The rings are called *pelele*. Livingstone compared the resultant disfigurement to the gaping maw of a crocodile, as the teeth are filed to match. A headman of that people, Chi-nsurdi, explained that the *pelele* were worn by the women to compensate for their lamentable beardlessness.

Schweinfurth and Baker have described the quartz crystals worn by the Mittu, Loobah and Latuka women in the lower lip (Fig. 213).

The Botocudo of Brazil take their name from the Portuguese term “botoque” or *bung*. Both sexes wear large wooden plugs or stoppers in their lips (Fig. 214).



The Eskimo tribes of the extreme north of America have very similar customs, according to Captain Adrian Jacobsen. On the Kuskokwim Estuary the young girls adorn themselves with beads and shells, threading them through their hair and piercing their lower lip in three places. A sort of stud of bone is then thrust through each perforation with the thicker end inside to prevent falling out, and the visible

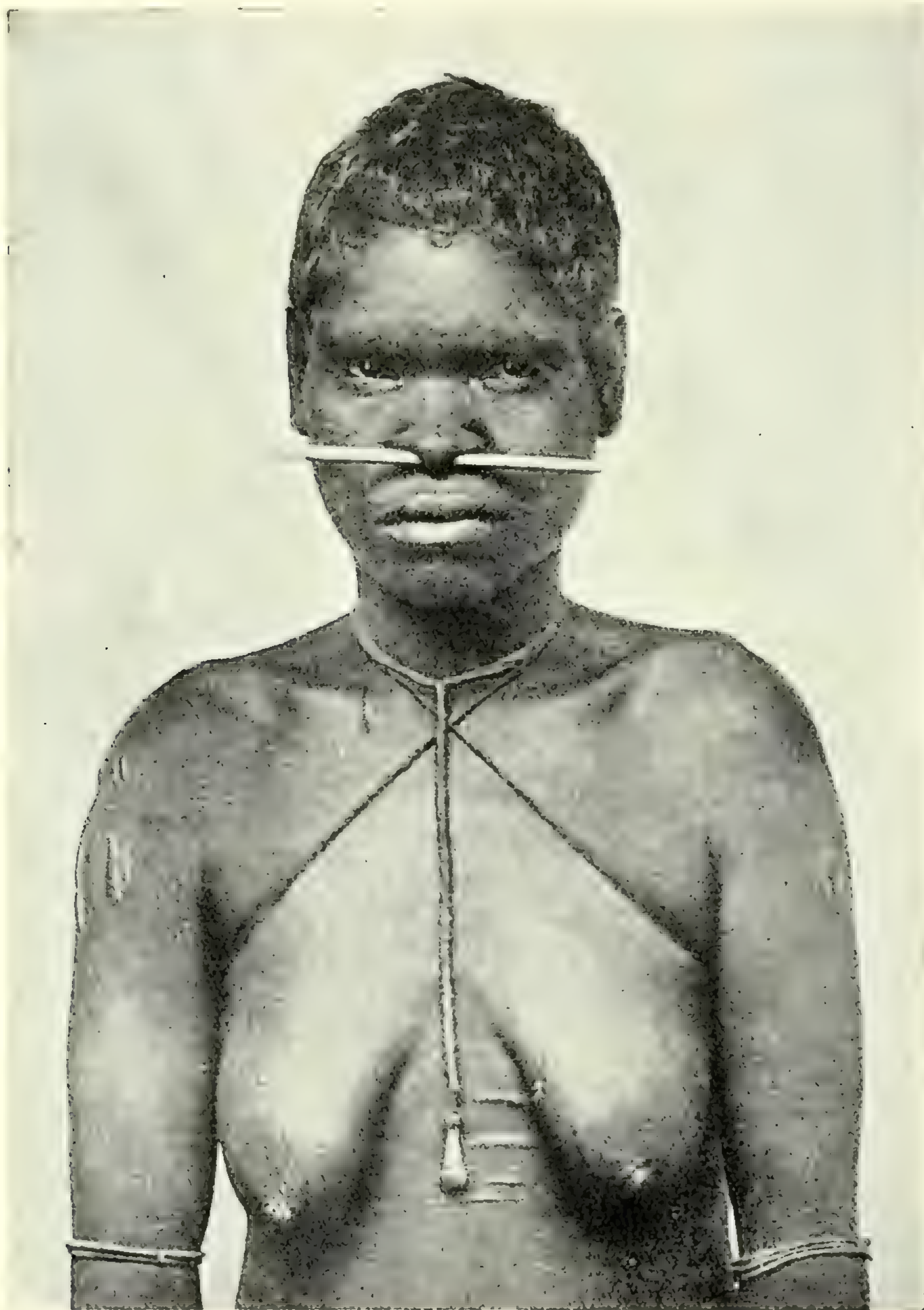


FIG. 209.—Woman from Queensland. (After Friedenthal.)

portion is then covered with beads. The septum is also pierced and adorned with a short bead chain. The latter custom is prevalent among Eskimo girls on the Lower Tukon and further North among the Malemiuts. The chin is tattooed as well (Fig. 215).

Finally, we may refer to the habit of plucking out the eyebrows, prevalent in Japan and among the Bongo women (Schweinfurth), as well as among the Sea Dyaks of Borneo ; Roth<sup>1</sup> says the Dyaks pull out the eyelashes as well, and in both



sexes. It would take too long to describe all the varieties of epilation and the shaving of the head particularly practised among African natives, so we merely refer to them and pass on.

## 6. MUTILATIONS AND DEFORMATIONS OF THE TRUNK AND LOWER LIMBS

We have already dealt with the custom of tattooing and shall now give a further account of mammary and genital mutilations and deformations.



FIG. 210.—A Bogobo woman from Mindanao with filed teeth. (After Buschan.)



FIG. 211.—Arecuna girl with lip plug.

The upper extremities engage our attention in this respect by the curious custom of letting the finger nails grow to an inordinate length in order, so it is said, to prove that the hands have never been profaned by work ! This custom is known in China, and it is said that the people of Annam borrowed it from their northern cousins. In China cases or thimbles of precious metal are worn over these nails to prevent them from breaking.

The mutilation of the fingers by simple amputation of one or more joints (as among the African Bushmen and in South India) is not decorative but sacrificial in intention ; either propitiatory, to ward off danger, or an emblem of grief. The



Australian blacks (according to Curr and Matthews) sometimes chop off the second and first phalanges of the little finger in quite young girls in order to make their



FIG. 212.—A Guiana girl (19 years) with a pin in her lower lip. (Photo, M. Bartels.)

hands “ lucky ” in catching fish. The left hand is generally chosen for this operation. Andrée<sup>1</sup> has collated the relevant material, and we shall refer to this subject later.



Sometimes the upper arm is encircled in early youth by a ring or bracelet which compresses it and is not removed but cuts deep into the flesh of the adult limb. Both among Papuan women in New Guinea and in the islands of the Torres Straits and among the Masai women cases are known and recorded (Fig. 216).

Oriental (or rather, Near and Middle Eastern) taste is greatly inclined to plumpness and fat in women. Slenderness is considered ugly and unnatural. Extreme adiposity is cultivated by special diet in the harems of Arabia and among many African peoples. The wives and concubines of African chieftains are fattened

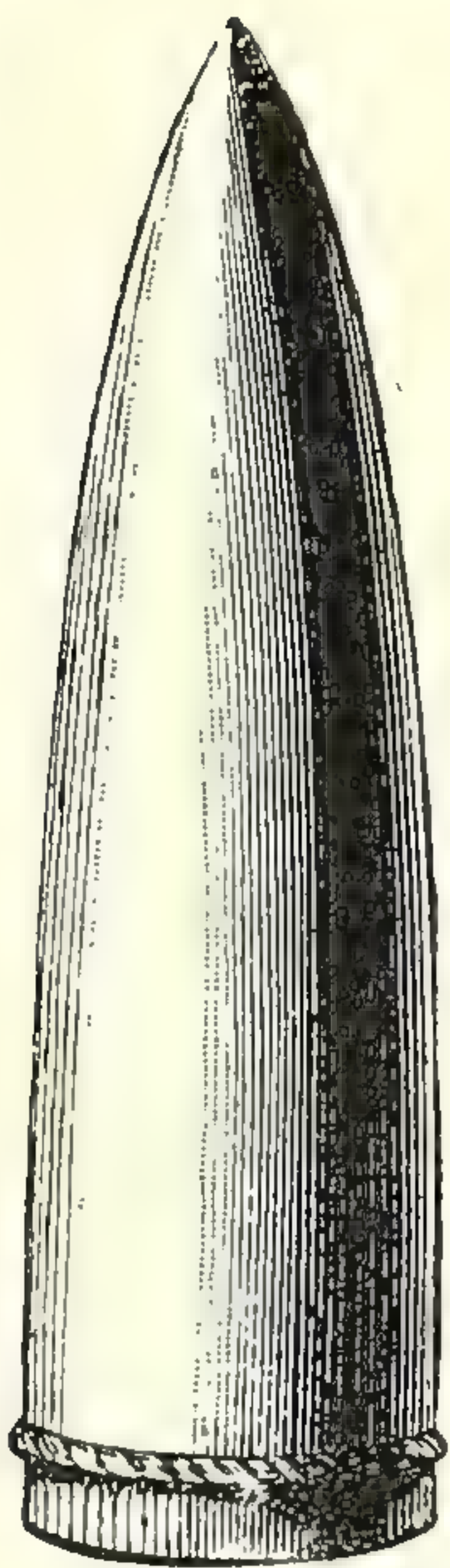


FIG. 213. — Cone-shaped piece of quartz worn in the lip (Upper Nile). (After Schweinfurth.)



FIG. 214.—Artificial deformation of the lips (Sara, Lake Chad). (After Buschan.)

with curdled milk or broth and soup of cornmeal; Speke, Schweitzer and Emin Pasha have given amazing examples of girls who had been so fattened that they had lost the use of their limbs, or of others who were treated as a kind of family heirlooms. They fed on milk diet with no water and, once a week, a salted meat broth.

Wherever Islam has held sway the preference for fat women appears. But, curiously enough, the ideal beauty of Ancient Arabia stressed other features than rolls of obesity, and even now the Himyarites are never plump or stout. But by Mohammed's time a superabundance of fat was admired as, for instance, in his favourite wife, Ayesha.

Excessive corpulence and laziness lead, of course, to many bodily ills, and make the movements and carriage a clumsy waddle. The poorer women, who have lives





FIG. 215.—Natives from Kotzebue Sound. (After Kotzebue.)



FIG. 216.—A Masai woman with heavy ornaments. (After Friedenthal.)



of hard work and poor food, generally appear more graceful and attractive, according to R. Hartmann, than their richer countrywomen. The dietetic rules for producing fat in Egypt are elaborate and combined with hot baths. In the sixteenth century Alpini described this system in detail.

Among the Tunisian Jewesses extreme obesity is common and emphasised by their peculiar costume (Fig. 217).

Chavanne comments on the enormous obesity of the milk-and-butter-fed girls



FIG. 217.—A Jewess from Tunis in Sabbath costume.

of the Trarsa, a people of the Sahara between Talifet and Timbuktu, an obesity all the more conspicuous as the men of their tribes are gaunt and bony.

Berghoff has described the revolting diet which girls are compelled to swallow for forty days before marriage among the peoples of Southern Nubia. Durra (meal), a little sodden meat and goat's milk is forced upon them, for the mother or other relative stands over them with the kurbash—or whip of hippopotamus hide—and has no mercy. This diet is combined with continual external applications of fat or friction of the body with oil and grease. Paulitschke gives similar facts about the Somali; it is well known in Nigeria, and in Oceania very great obesity is cultivated and admired by the Hawaiians, Tahitians and people of New Ireland.



Among the Hindus extreme plumpness has been admired since the days of Manu, who recommended his faithful to seek brides "graceful in gait as young elephants."

The Far East, on the other hand, *i.e.*, China and Japan, admires slenderness and daintiness in women.

The injuries and positive malformations caused in women of European races



FIG. 218.—The fattened daughter of a chief in Nauru. (After Friedenthal.)

through wearing tight or badly shaped corsets are well known and are not small. Many years ago the great anatomist, S. T. Sömmering, pointed this out, and more recently Ranke and Stratz have written eloquently on the subject and shown pictures and photographs in support of their arguments.

[O. S. Fowler, the New York phrenologist, was of opinion that one of the results of tight-lacing was to increase sexual desires, and in an amusing passage fulminates





FIG. 219.—Tight constriction of the waist in a Spanish model. The flesh overlapping the belt and the gluteal development are both noticeable.



against the practice. After saying that in revealing this he will excite opposition, he continues: "away goes this book into the fire! 'Shame! shame on the man

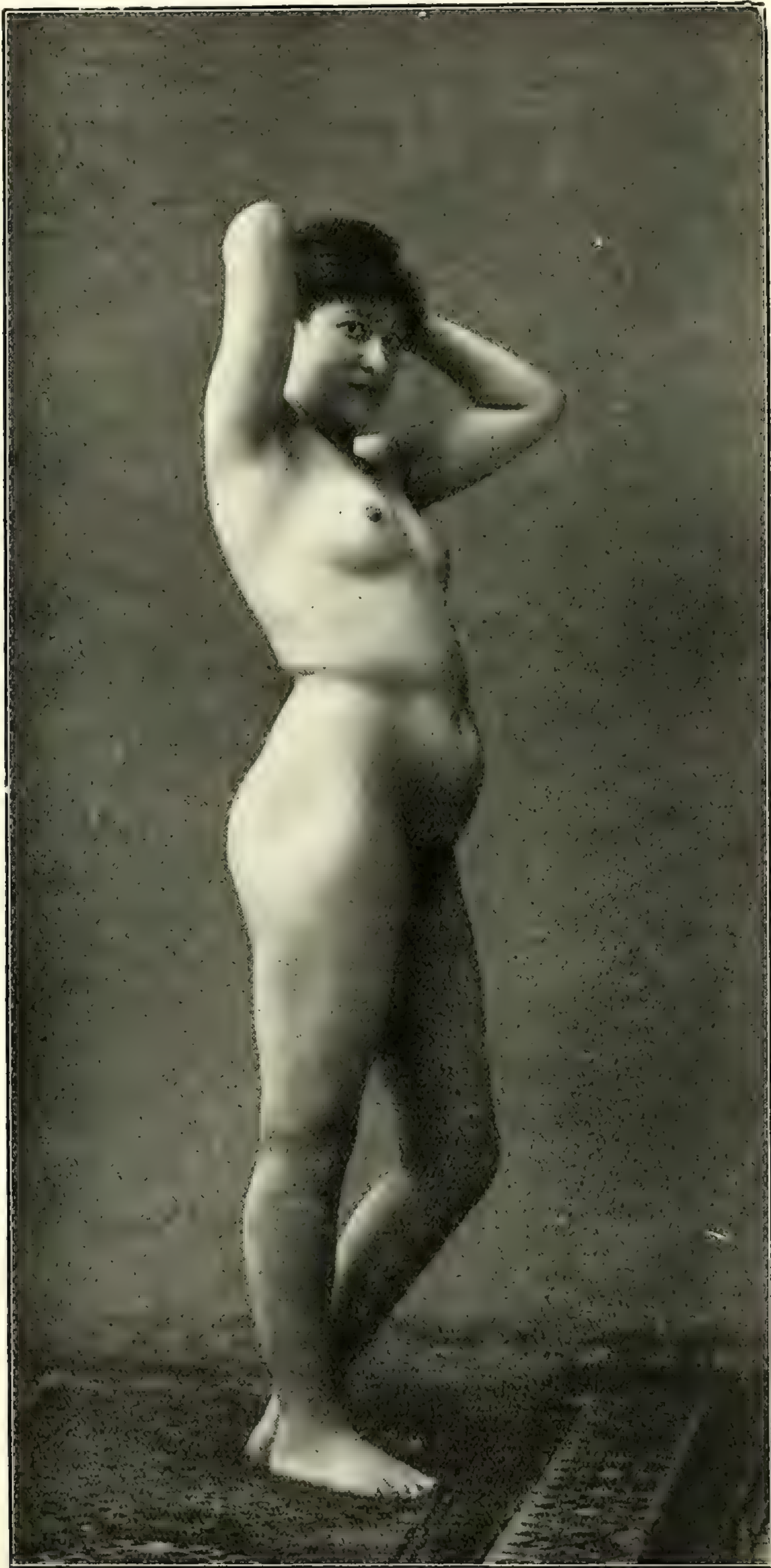


FIG. 220.—Viennese girl showing deep furrow due to tight lacing.

who writes this!' exclaims Miss Fastidious Small-Waist. 'The man who wrote that ought to be tarred and feathered.' . . . Let me tell you, Miss Fastidious, that



the less you say about this the better ; because I have TRUTH on my side. . . . It is high time that virtuous woman should *blush for very shame* to be seen laced tight. . . .”]

In any photographic reproduction of a nude body it is unmistakably evident if there has been habitual tight-lacing or undue compression (*cf.* Figs. 219, 220). A disfiguring ring-shaped depression, like a furrow, appears round the body ; and sometimes this is made more evident by darker pigmentation. And if the constrict-



FIG. 220A.



FIG. 220B.

Results of tight-lacing. (Roy. Coll. of Surgeons, London.)

tion has been begun in childhood there may be terrible injuries to the liver and displacements of the pelvic viscera, as well as such obvious exterior malformations and bulging flesh as are shown in the illustrations of a Spanish model from Barcelona and a Viennese woman respectively.

Of course there may be annular marks and furrows round the body even if a corset has not been worn, through tightly fastened skirts or petticoats pulled in with string. But this particular pressure is generally in a less dangerous region, not on the lower ribs and liver, but over the hip bones. Primitive women sometimes show symptoms of this form of constriction. Fig. 221 depicts a woman from



Mentawai, an island group near Java (Dutch East Indies). The skin of her abdomen flaps down over her tight girdle. The Sarasin cousins record the use of corset-like



FIG. 221.—A Mentawai (Sumatra) woman showing waist compression. (Photo, F. Schulze.)

belts among the Toradja on Celebes. They were from 4 to 6 cm. wide and twisted from vegetable fibres and strips of textile. The women made and adjusted them



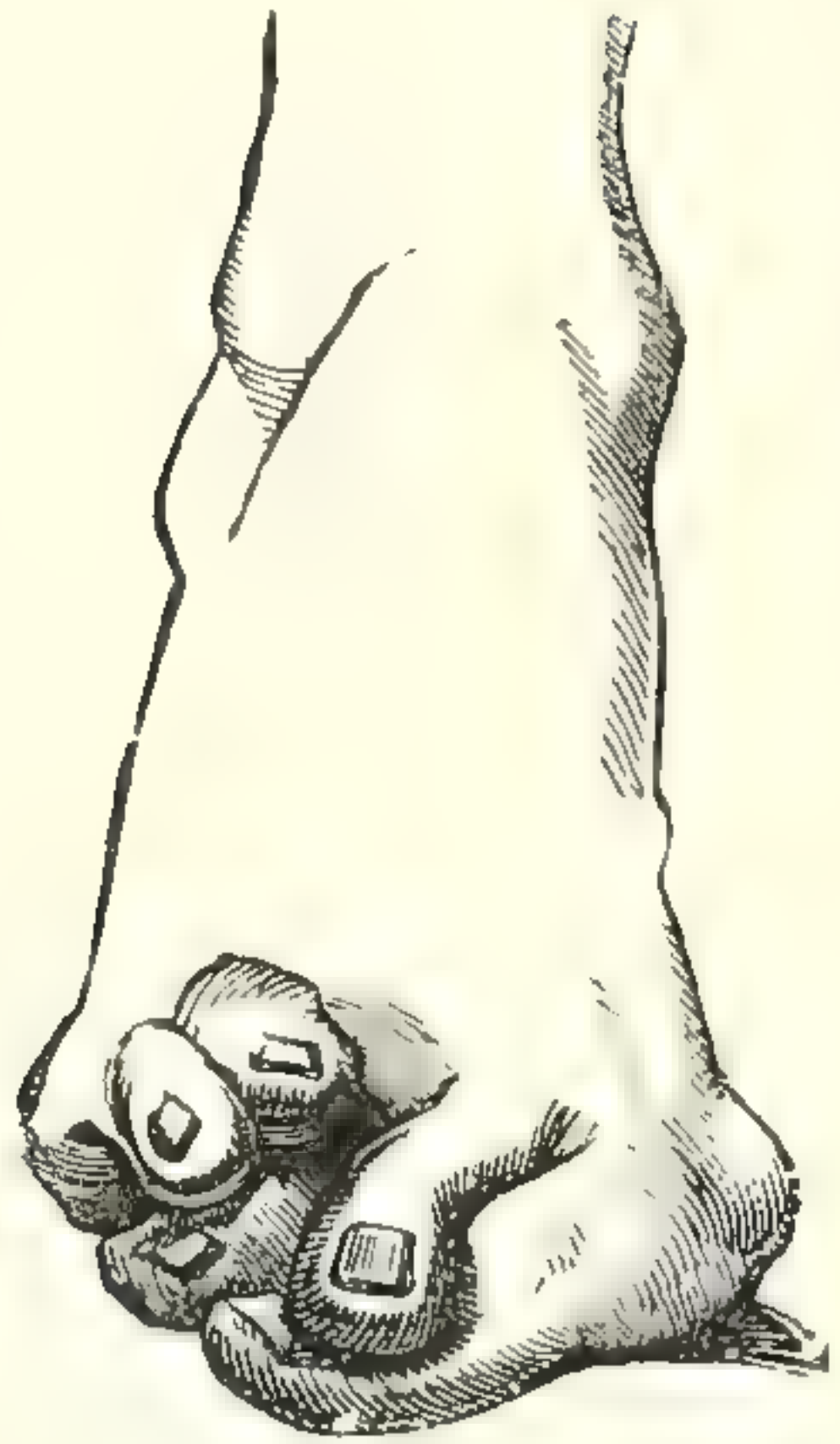


FIG. 222. — Foot showing the result of an ill-fitting shoe. (After Erichsen.)

for one another so tightly that they had to be cut away during pregnancy, being renewed and readjusted after childbirth. Those who are interested in the history and use of the corset can consult the works of Caplin, E. D. Martin, Leoty and Stratz.<sup>9</sup>

## 7. DEFORMATIONS AND MUTILATIONS OF THE LOWER EXTREMITIES

Fig. 222 gives some idea of the ravages of tight and ill-fitting shoes on the bones, muscles and tissues of European women's feet. The white woman's feet are often treated as of no account; they are neglected as well as deformed. Primitive peoples give the foot particular attention and care, if only for purely utilitarian reasons, and avoid malformations. Sometimes the toes are encircled with rings. But rings are

more frequently and conveniently placed round the leg at the junction of the foot (Fig. 223) as was also done in Europe in prehistoric times and at the dawn of recorded history.

In some African women the lower limbs from knee to ankle are covered with metal rings. And sometimes the calves and shins are constricted so that they bulge enormously above and below the metal circlets.

Du Tertre, the oldest and fullest authority on the customs of the West Indian aborigines, says that the Carib girls from early childhood constricted their legs from ankle to calf with bandages (Fig. 224). The flesh was much swollen between the bandages. Schomburgk found the same custom among the Carib women on the South American mainland, as well as other tribes in Guiana.

The same two constricting bandages, one sock-like from ankle to calf and one like a tight garter below the knee, were worn by the Guiana Indian women exhibited in Umlauff's troupe in Berlin several years ago (Fig. 225).

Very slight development of the calves is typical among certain coloured races such as the Nubians, Galla, Somali, Danakil, and, in Asia, the Hindus, Singhalese, Veddas,



FIG. 223.—Rings placed round the leg of a Gaboon woman. (Photo, S. Williams, Berlin.)



Tamils, as well as among the Australians and Melanesians. Adolphe Bloch mentions this and concludes that there is some racial inheritance here which suggests a primeval population of negroid type in all these regions. Very slender limbs are also typical of Old Egypt, as shown in statuettes and wall paintings (Fig. 226).

There are apparently only two nations who intentionally cripple the action



FIG. 224.—Carib girl, showing calf binding. (After Du Tertre, 1667.)

of the lower limbs and extremities : the Chinese and the Kutchin Indians (Fig. 227) in the interior of Alaska, along the banks of the Yukon River. Pliny just mentions an Asiatic people who had the habit of making women's feet small and were called "Struthopedes," but the great Chinese nation and the obscure American Indian tribe are the only members of the human race who preserve that custom to-day.



The artificial treatment of the Chinese women's feet is a form of feminine "Beauty Culture" in the strictest sense of the word. *Never, and in no circumstances is this crippling torture applied to boys.* But it should not be overlooked that the custom does not prevail over the whole of China. The Manchus—including the members of the late Imperial family—detested and refused the mutilation, according to Bastian. Whole districts in various parts of China were immune from it. And the Chinese women resident in the Sunda Isles do not bind their feet at all. But Keitner recounts that in the Singang-fu and Lantscho-fu districts, the calves are constricted as well as the feet. The bandages reach knee high "and the effect is accentuated if a strip of



FIG. 225.—Guiana woman with calf binding.



FIG. 226.—Slender limbs of Nefert-ma-u (New Kingdom). (After Fechheimer.)



flesh, an inch wide, protrudes in the middle like an old ragged garter" (cf. Fig. 228).

There are evidently many local modifications and degrees of deformation,



FIG. 227.—A Kutchin woman (Alaska).



FIG. 228.—Chinese foot : "Golden water lily." (Anthrop. Ges., Berlin.)

varying from province to province. Or, possibly, these differences are not really regional but are simply examples of the successive stages of the same process.

The first detailed accounts of the custom were given to Europe in the nineteenth





FIG. 229.—Left foot of a child of 10 years in the shoe. First stage of foot-binding. Two-thirds natural size. (After J. Fränkel.)



century by Morache, Lockhart, Bingham, Martin<sup>3</sup> and others. They were followed in their researches by Welcker and Rüdinger. After the Boxer risings and the further internal troubles of recent decades much new material was made available



FIG. 230.—Left foot of a woman of 24 years in the shoe. Second stage of foot-binding. Three-quarters natural size.  
(After J. Fränkel.)

through Vollbrecht, Perthes, Haberer, P. Brown, Dekeyser, Haslep and Hasebe. Röntgen photography has been valuable, especially when used by such authorities as H. Virchow and J. Fränkel. The latter had the resource of radiography at his disposal and took X-ray photographs of the feet of various Chinese ladies resident



in Berlin : a fortunate inspiration, as it is extremely difficult to get permission to inspect the unclothed, deformed foot. Dr. P. Bartels was indebted to the kindness of Dr. J. Fränkel for the photographs reproduced in Illustrations 229, 230 and 231. They are specially instructive because they show the footwear as well, and this has considerable importance in the general effect of the custom.



FIG. 231.—Left foot of a woman of 22 years in the shoe. Third stage of foot-binding. Three-quarters natural size. (After J. Fränkel.)

Among the poorer classes the mother herself binds her daughter's feet. Wealthy people have specially trained women experts who work in the families on this task.

In the first years of childhood the little girl is spared and runs about in loose slippers like her brothers. The earliest stage at which the operation begins is four years ; in other families it is deferred till six or even seven. A Chinese lady informed Professor H. Virchow that, in the first cases, the child was of very high birth and would not need to walk ; but, if the children are plebeian, they must have attained the full use of their feet before they are " bound."





FIG. 232.— Seven women showing pelvic development in relation to foot-binding. (After Baelz.)



Morache describes the first stage as a persistent kneading and moulding of the foot. The great toe is left in its natural position, but the four other toes are forcibly bent downwards and pressed over and on to the sole of the foot with steadily increasing force. They are kept in place by means of a bandage 5 cm. wide. This bandage is changed daily and as it is removed the foot is "aired," bathed and rubbed with spirits of sorghum. If this precaution is neglected severe ulcers are apt to develop.

The child wears a laced boot reaching rather high up the calf, and with a pointed toe. The sole is quite flat and heelless. This procedure alone results in the kind of structural modification usual among the majority of women in the Northern Provinces of China.

The more elegant and aristocratic form is more complicated. When the toes



FIG. 233.—A foot of a Chinese woman. (Anthrop. Ges., Berlin.)

have been permanently bent over the sole, a metal cylinder is placed under the sole and bandaged firmly in place; the instep, ankle and lower leg are tightly constricted with firm bandage supports, and the mother or attendants force the toes and heel together under the cylinder so that the bones of the foot are displaced. Finally, the maltreated extremity is forced into a shoe with a thick convex sole. And the bandages remain unloosened for days, in spite of inflammation, tears, cries and feverish symptoms. And the children are forced to stand upright and to walk on their crippled feet, as otherwise they would lose the use of their limbs. The mother and nurses are said to console the tortured child with promises of beauty in the future and of a husband's approval. [W. Kent Hughes states that the results are less than  $3\frac{1}{2}$  in. long! Cf. Marie Haslep.]



Perthes has described a third degree of this mutilation, quoted from the statements of an educated Chinaman who told him that "in Southern China the great



FIG. 234.—Foot of a Chinese woman (60 years) from Shantung. (After Virchow.)

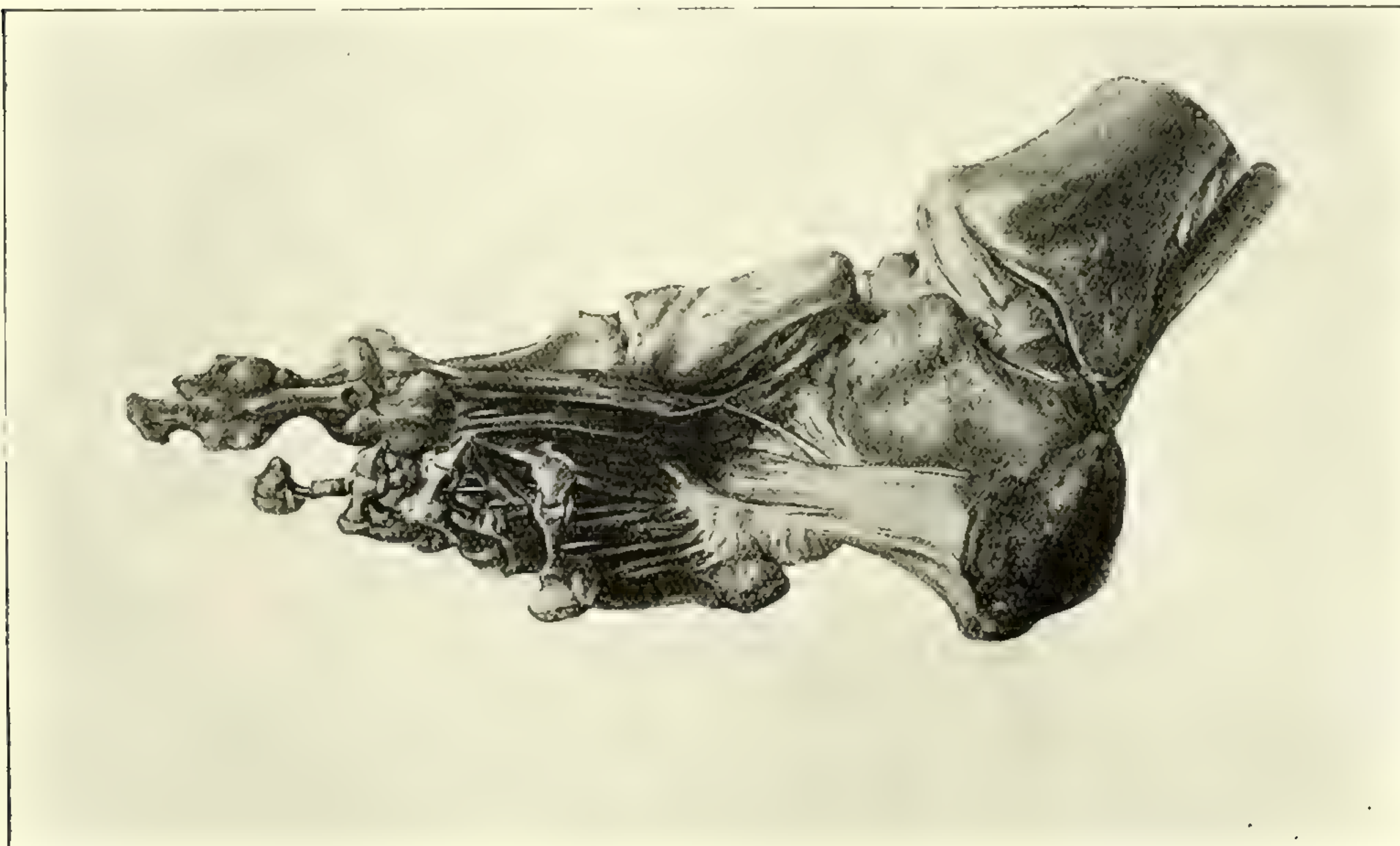


FIG. 235.—Plantar fascia of foot shown in Fig. 234. (After Virchow.)

toe was sometimes wrenched upwards and over on to the instep and bound tightly down." He stated that he has not seen such feet, but the information accords with Cooper's account.



Morache, as a medical practitioner, did not find cases of "the profound ulcers, the fetid suppurations" described to him by others, though he found atrophied tissues and abscesses. But Parker has recorded cases of gangrene in both feet and Martin<sup>3</sup> has mentioned even fatal results. Others, again, say there is no risk to life.

If the girls have once survived the ordeal and the bones and tissues have "set," the walk is permanently altered. They sway, or rather, wobble from side to side with stiff knees, as though on stilts, for the whole weight of the body is balanced on the point of the heel and the ball of the great toe. They have to use sticks for walking or to lean on the arm of their attendants. Morache points out that the extensor and flexor muscles of the foot atrophy so that "the leg assumes

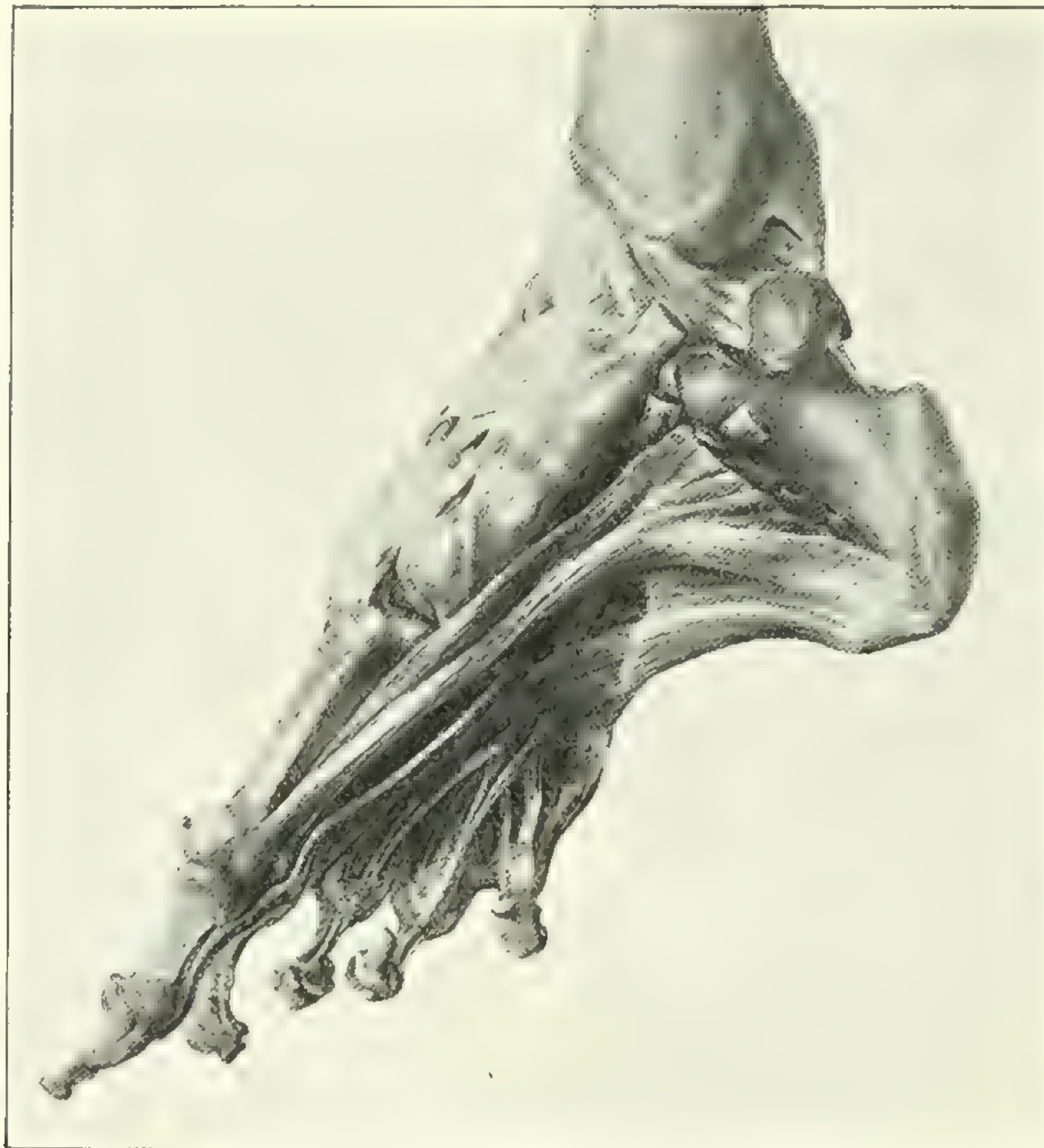


FIG. 236.—Plantar fascia of foot shown in Fig. 234. (After Virchow.)

the shape of a cone pointing downwards." And he compares the method of progression of the Chinese woman with that of a man whose two legs have been amputated and replaced by wooden limbs; for in both the lower half of the leg has become a "rigid lump of matter"—at least so far as walking is concerned.

Gray and Virchow recount the pain\* and difficulty of walking that results. Some Chinese ladies are carried like children on their slaves' backs. The lady consulted by Virchow crawled on all fours when she thought herself unobserved.

The poetical imagery of China has christened the feet of Chinese great ladies, "golden water lilies"—*Kien-lien* (cf. J. F. Junker).

The exterior impression produced is first, one of extreme smallness. In the collection of Dr. M. Bartels was a plaster cast of a "golden water lily" measuring 8 cm. (3 in.) from the tip of the toe to tip of heel. The diminutive size of the foot is accentuated by the shape of the shoes. Virchow<sup>2</sup> has described the various

\* R. P. Harris says that the feet cease to ache in two years.



patterns of footwear in use, but we may roughly divide them into heeled, the heels being very high, and flat. The effect is much emphasised if the heel is high.

The second effect is the walk, which is considered very attractive: the Chinese according to Haberer, regard large feet and "mannish strides" as hideous in women.

The third, more remote, result is mentioned by Martin. The pelvic muscles and the whole pelvic region are said to appear larger by contrast with the lower limbs. This was disputed by v. Baelz, who brought forward the photograph of seven Chinese women of the lowest class, all completely nude except for their shoes and all but one with bound feet (Fig. 232). Yet there is no obvious increase of the pelvic girth, and the only woman with "natural" feet—on the extreme right—has the widest and fleshiest pelvis of the seven in proportion to her height. On the other hand, none of these seven women has suffered the second degree of foot binding: their feet are bound but flat.

As regards the various degrees of dislocation and distortion in the foot itself, as a result of the different stages of binding, we refer readers to the illustrations reproduced in this text (Figs. 229 to 231). Virchow has described a foot which "probably represents the final and culminating masterpiece" of this practice and in which the two lateral middle bones of the foot are bent, and the front and rear portions twisted. Further details, anatomical and physiological, may be found in the works of specialists, particularly Hasebe, who examined 11 specimens.

H. Virchow, who examined the preserved foot depicted in Figs. 234–236, found the muscles "diminished in volume and shortened, but in good and normal condition and well preserved in their details."



FIG. 237.—Chinese lady bandaging a foot. (After Choutzé.)



What were the origin and purpose of this extraordinary custom? Many contradictory answers are given, even in China. Leaving obvious myths and legends out of consideration—for they attribute the origin of foot binding to the ages before 1100 B.C.—we find that the historic dates suggested vary between the tenth century A.D. and earlier. Perthes asked Merklinghaus, the interpreter of the German Legation in Peking, to look up sources for him, and was informed that “Foot-binding is said to have been introduced by the Emperor Chen-hon-djon, who lived towards A.D. 580, and was exceedingly lascivious. He wanted to create a new feminine charm in diminutive feet.” And there is no doubt that the custom

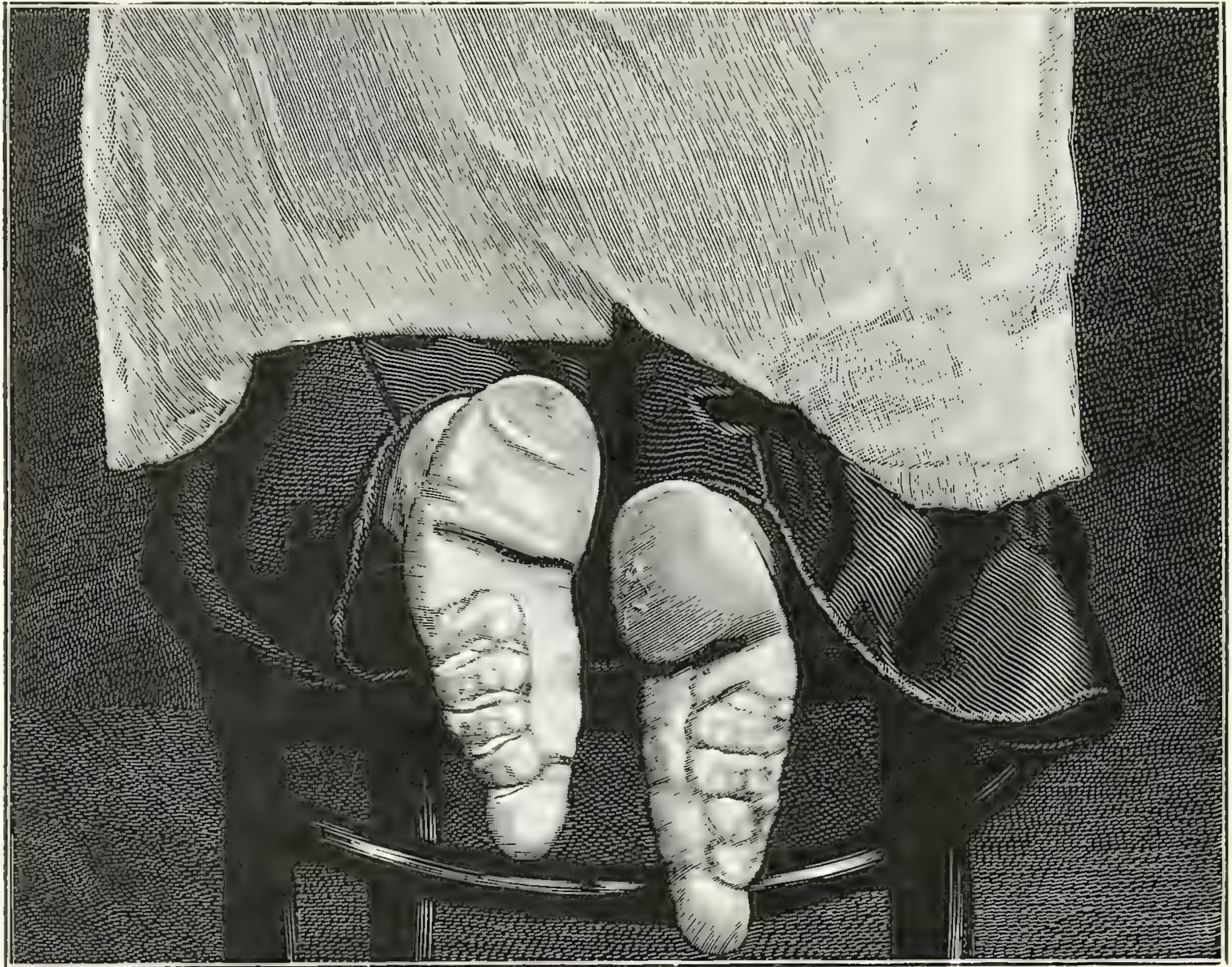


FIG. 238.—Kneeling woman, showing the soles of her deformed feet. (After Laschke).

was non-existent at the time of Confucius (551–479 B.C.). Marco Polo, however, who visited the brilliant court of China in the thirteenth century, makes no reference to bound feet. Scherzer and other writers regard foot binding as the fruit of masculine jealousy lest the women should move about freely and cause their husbands anxiety. But does the mother who binds her daughter's feet visualise possible future infidelity on the girl's part? Baelz told P. Bartels that he thought the custom was derived from a deformity or peculiarity in some Imperial personage and was a form of courtly flattery, like the *perruques* of the seventeenth century in Europe. Karl v. den Steinen, in a discussion of Berlin Anthropologists, thought that foot binding, like long finger nails, was the specific sign of wealth and leisure and of freedom from the need to work.



There may well be, however, an erotic explanation of the foot-binding custom. At the Dresden International Hygienic Exhibition in 1911 a Chinese lady of great culture mentioned this as the *only* reason for its introduction and preservation. And she added that the modesty of the Chinese woman has special reference to her feet to this day. This appears to confirm the theory, and Morache seemed to be also of the same opinion. To quote his own words :

“ To those who realise the degree of lubricity natural to the Chinese, it is evident that the smallness of the foot excites them and causes this trend of associations (qu'ils attachent une idée de cette nature à la petitesse du pied).”

Moreover, Christian converts among the Chinese confessed that they had gazed wantonly at the little feet of ladies, regarding it as a sin, according to their new faith. And Morache adds that he had been assured that persons exhausted by opium were in the habit of practising a form of foot and shoe fetishism and obtaining enjoyment by the sight and touch of “ tiny and very dainty shoes.” Rockhill mentions a festival celebrated in the fifth month but unknown to him in other parts of China. It is a sort of foot-parade, the women walking up and down dressed in their best finery, while the men admire, criticise or condemn the size and shape of their feet.

Even the women shown in Fig. 232, who were all professional prostitutes of the lowest grade, refused to uncover their feet, though otherwise they were quite naked. And Röntgen photographs of Chinese women's feet could only be taken by stealth. Naেকে<sup>2</sup> thinks that we have here a case of a specialised and relocalised modesty, and that the crippled foot is a fetish—“ less a fetish aesthetically than sexually.”

[In his “ Adversaria Sinica ” Professor H. A. Giles has put forward another theory for the foot-binding of the Chinese. He claims to have learnt this in China and has little doubt that it is the real reason for the practice.

In introducing the question he states that there are cogent reasons for supposing that feet were bound long before the tenth century A.D. In A.D. 150 there occurs a passage in “ Tsa shih pi hsin ” which refers to the toes being kept together by bandages. Even as early as the twenty-fifth century B.C. we read of a woman whose feet could not even fill the print of God's big toe ; and there is ample evidence to show that small feet have always been much admired in China.

The reason adduced by Giles is that by binding the feet the thighs would be increased and the femoral muscles strengthened. This erotic attraction, according to Giles, explains the ignorance of the origin of the custom both in China and elsewhere. There is no truth in the theory advanced by Dr. J. X. that binding the feet has an effect upon the muscles of the vulva and vagina.]

Of late there has been organised agitation against foot binding. It is said to have originated among those Chinese who had lived in the U.S.A. The Empress Dowager, before her death, issued an Edict against the practice, recommending its cessation. In Shanghai there is a special society for its abolition, with many highly placed and educated members. The missions, especially the Protestant missions, have also been helpful here, but, in some Catholic missions, so Haberer reports, the children's feet are bandaged lest in any anti-Christian outbreaks they should be recognised and tortured.

The present Chinese Republic has prohibited the custom of foot binding.

The only race, except the Chinese, who bind women's feet are the Kutchin Indians, according to Stoll. These people belong to one of the three branches of



the Athabascan stock and live in the interior of Alaska by the Yukon River. Krickeberg describes them as indefatigable and adventurous traders, and it may be that they have in some way discovered and copied the Chinese habit. Richardson recounts that the babies and children are carried in a sort of litter on their mothers' backs ; their feet are encased in warm fur leggings and tight bandages in order to dwarf their growth, as small feet are naturally beautiful (Fig. 227).



## CHAPTER V

# THE ATTITUDE TO WOMEN IN FOLKLORE AND TRADITIONAL RELIGION

### 1. SUPERSTITION AND THE STATUS OF WOMEN

IN studying primitive peoples we find that many of the situations and facts of life are associated with magic and with powers of good and evil. And it is natural that the mysterious processes of pregnancy, birth, puberty and copulation are considered to be under a double pressure of good and evil currents, and affected alternately by demons and by gods. And by a further logical process of thought, such primitives attempt to secure the protection of benevolent powers and to drive away, evade or frustrate the attacks of the malevolent from themselves and those dear to them. Human intelligence has displayed and still displays a wealth of fancy and resource in this direction, and no race is either too backward in evolution or too much in the vanguard of progress, not to participate in these activities. And the majority of human beings are too weak in mind and will, too ignorant and perplexed, to take their burdens on their own shoulders and make terms themselves with these divine and demonic powers. They require intermediaries, wiser, bolder and more highly favoured than themselves and adepts in the necessary ceremonial. Thus wise women, priests, priestesses, sorcerers, exorcists and shamans arise to meet this need, and we shall deal further, in a later section, with some of their activities.

This quest of the primitive peoples for knowledge and help contained the seeds of what became the science and practice of medicine. Heusinger says, very rightly :

“ The beginnings of the healing art among savages always show supernatural and mystical elements, together with empiric physical methods, and the same experts administer the drugs or herbs and perform the incantations. As civilisation evolves there is increased specialisation : the incantations are performed by priests and the plant pickers and preparers become ‘ medicine men.’ They may synchronise for quite long periods, *e.g.*, even up to the fourth century A.D. the Greeks had the Asclepios sanctuaries and rites, as well as the medical profession ; but Asclepios worship finally became a super-physical adjunct and a last resource. In most races, however, magical or mystical medicine is either wholly suppressed and discarded or devolves on to the priestly caste.”

For the primitive individual and race, sexual functions, especially those of women, were extremely mysterious ; and this sense of mystery was attached to the whole personality and all activities of this strange being. We shall have occasion to cite many examples. Women were supposed to exude a kind of force which might almost be likened to virulent contagion. The Syryenian Finn, Nalimov, gave, in 1908, a detailed account of the beliefs and customs of his people.

“ After sexual intercourse, there develops an emanation termed *pež* of extreme harmfulness and highly contagious. All men are considered infected by *pež* after coitus until they perform special ceremonies of purification. . . . Woman is regarded as the source and focus of *pež* ; human beings and animals suffer in various ways, according to their respective natures, if they have contact with a woman. Even if the woman steps over them the infection may be transmitted. A child, to whom this has happened, falls sick. A dog loses his scent and power of



tracking game, also his vision of the spirits and wood demons and can no longer protect his master from their attacks. A man loses his strength, falls ill, loses his skill at the chase and becomes a weakling in every way.

“*Pež* is transmitted to men and youths by indirect contact ; or if the hands of the woman touch some object such as a spindle at the same time. The spindle is symbolic of woman and, therefore, in the opinion of the Syryenians, an excellent transmitter and, therefore, no man or boy in that tribe will pick up a spindle or hand it to its owner. Such recklessness would destroy their hunting capacity for life. The women often drop their spindles and beg some man to hand it to them, hoping to gain from him by magic.

“The evil influence of woman extends to inanimate things as well. If she walks over nets and snares, neither fish nor game will be caught, and the hunters are in the habit of purifying their tackle with the smoke of wild juniper. The women may not cross the threshing floor nor sit on the corn sheaves ; nor walk among the hop poles and pick the hops, etc.”

These superstitions are extreme examples, for, as a rule, they apply only to menstruation in most primitive peoples. Among the Syryenians they refer to women who are sexually active. Young girls, even though past puberty, may step over children and dogs with impunity and aged women appear quite free from *pež* ; they bathe the children and are quite indispensable at confinements. Nowadays this primitive superstition is dying out in some parts, but the ordinary Syryenian keeps firmly to the belief in *pež*.

D. H. Müller found an Arab tale perpetuated in the Sokotra Texts (No. 40) :

“A man received a she-goat from the air spirits. They said : ‘May God bless thee ! But no wedded woman may drink thereof, nor she that hath her courses, nor mayst thou milk the goat into the butter skin.’ And the man said : ‘Yea, verily !’ He took the goat to his house and three years passed and his cattle multiplied exceedingly. Then the women of the household that had their courses drank of the milk and he put it into the butter skin. And his cattle died or were stolen from him till they were not. A she-goat whose milk is forbidden to women to drink, and which must not go into the butter skin, is called *mahdédoh*.”

Thus we can no longer feel surprise that primitive customs and ceremonies of immeasurable antiquity are interwoven with pregnancy, birth and child-bed. All the associations and habits connected with sexual matters are easily and closely interwoven with magic, for the more mysterious the manifestations of sex, the more peculiarly and exclusively feminine will be certain of the results.

Attempts have been made in various quarters, independently and in places remote from one another, to clear up the mental concepts at the back of these ideas. Thus in Saïda, in Palestine, the folk customs and superstitions of the rural Syrian population have been recorded, and are termed by the Muslims “*Ilmerukke*,” or old wives’ science. J. G. Schmidt in 1705 made a large volume out of the current German superstitions of his time with a vigorous castigation under the title “*Die gestriegelte Rockenphilosophia*” (The True Petticoat Philosophy).

But it seems very doubtful whether these superstitions and traditions will ever be eradicated. They are far too deeply anchored and far too widely ramified in the mind and emotions of humanity.

## 2. RELIGIOUS CREEDS AND CODES IN RELATION TO THE SEX LIFE OF WOMEN

In almost all human races known to us religious codes are much concerned with prescribing or with prohibiting certain sexual patterns of conduct. The attainment of puberty in both sexes is almost always celebrated with solemn and intricate rites, and, in the “higher civilisations,” it receives definite religious recognition, *e.g.*, in Christian “confirmation.”



Pregnancy, confinement and birth have also their special ceremonial. The intimate physical side of marriage is sometimes regulated most strictly. There are purifications, abstentions and special dietetic regimes ; in fact, we may regard these sex rituals as the unconscious beginnings of personal hygiene.

It is probable that these sex rituals were primarily meant to secure fertility and increase the stocks that practised them. In certain periods of history and under certain geographical and cultural conditions, increased population was an unmixed benefit for a race, but to-day in many States it would be utterly disastrous. We have definite proof of the intention to promote fertility in many creeds.

The *Talmud* says that he who wilfully abstains from marriage in order to avoid parenthood is morally the equivalent of a murderer (*Tractate Yēbāmōth* 63 b.). It is even stated that "he who preserves only one human life has done as much as though he preserved the universe." And this emphasis on the preservation and production of human life was the keynote of the religious sex ritual which evolved among the Hebrew people. Moses said expressly that the preservation and continuance of the race depended upon obeying the Word of the Lord : "That thy days may be long in the land" (*Moses* 18, 5). Thus there was instituted a ceremonial purification after the monthly period and childbirth, and a special sacrifice after recovery from the puerperium, which was thus placed under the special supervision of the priestly caste.

Zoroaster prized "The wedded above the unwedded, the heads of households above them that have none, the father above the childless, the rich above the poor," etc. Among the Medes and Persians the "Zend-Avesta" was a sacred book, and we know how great a stress it laid on a hygienic ritual for the preservation of life and how highly it valued life, although only the twentieth section of this great work, the *Vendidad*, has come down to us. In Zoroaster's teaching a great rôle was given to the priestly *magi* ; they healed the sick and dealt with evil spirits in illness, birth and pregnancy. To this day the Zoroastrian Parsis repudiate celibacy and by the Laws of *Manu* everyone had to marry "to preserve the seed." The Laws of *Manu* give complicated and detailed directions as to how to select the bride and how to purify oneself and what food to eat or to avoid, etc. The Brahmins, priests and sages in one, were given special supervision of childbirth.

The Buddhists are not explicitly told to put themselves under priestly supervision in their most intimate affairs. But they seek priestly counsel and support, and the Lamaist are even more assiduous in this respect than the Roman Catholics of the West. These priests are spiritual fathers and give names to the children. Moreover, the Buddhist hierarchy have the healing art in their hands wherever their faith prevails. In Tibet, in parts of China, in Mongolia, in the whole of Northern Asia, they are at one and the same time, physicians, astrologers, invocators of spirits, exorcists and magicians. Their services in all these capacities are in request, according to Koeppen, whenever a new human life is brought forth.

All the important vital epochs in human life are invested with religious ceremonies and prohibitions, and frequently entail a ritual separation or seclusion from the active life of the community. This is the case at birth, at the ceremonies of piercing lips and ears, tattooing and dental extraction ; of circumcision, at the onset of menstruation, the establishment of pregnancy and at death. A special "emanation" is supposed to infect or contaminate those who have contact at such time, and there is a whole network of precautions and propitiations to be observed, particularly as regards diet. Here, then, we again see the transition from ritual superstition to rational hygiene.



CHAPTER VI  
THE FEMALE GENITALIA  
RACIAL AND ETHNOGRAPHICAL CHARACTERISTICS

1. GENERAL.

THE genital organs and the sexual and reproductive functions are of central importance for the whole life and personality of women. Moreover, they have structural differences in various peoples. Unfortunately the material at our disposal is slight, for it is not generally realised that here are important facts for investigation. All human manifestations are worthy of study, and sexual matters are, perhaps, most of all in need of honest and accurate investigation and discussion.

In order to understand these differences in the various races the external characteristics of the genitals must be examined. Special attention must be paid to the pelvic region in view of its importance for childbirth, and finally some consi-



FIG. 239.—Schematic representation of the vulva (?), Musée de Périgord. (After Didon.)

deration will be given to the distribution of hair on the body and form and contour of the breasts.

Friedenthal<sup>4</sup> has collected useful data bearing on the differences between human beings and the anthropoid apes. He shows that the female organs in our species are much more complicated in structure and more highly evolved; the vagina especially is deeply but delicately corrugated throughout its length in ridges and folds. Poech<sup>1</sup> maintains that the Bushwomen have vertical rimae pudendi, and that, even among quite young persons, the inner labia protrude visibly. There can be no doubt that these organs have great anthropological significance. To give only one example, Professor K. Müller,<sup>13</sup> of Dresden University, discovered and recorded 111 quite distinct names for the genital organ of woman in the written literature of the Old German tongue and its dialects. As Aigremont has shown, the most usual symbol in language is a shell or a snail. Luquet<sup>1</sup> has collected a plastic and graphic record of the same type in “*Anthropophyteia*,” and, moreover, he is of opinion that there was a sign for this in the Cretan (Minoan) alphabet, and it appears that this was certainly the case in other ancient alphabets as well (*cf.* Fig. 239).

[The symbol of a shell for the vulva is widely spread. In this connection the importance of the cowrie can hardly be exaggerated. The similarity of its opening



to the genital cleft has led man to associate it with the same, and it became a "giver of life" and assumed a *rôle* in human culture which otherwise it might have never attained. Thus its significance for the position of woman is outstanding. Moreover, it has been suggested that the enormously developed lower extremities in early female figures are due to an attempt to combine a woman and a cowrie. For the whole theory see G. E. Smith<sup>1, 2</sup> and W. J. Perry.<sup>1, 2</sup>

In considering feminine functions, we must include not only pregnancy, childbirth and lactation, but menstruation, coitus and conception; and also practices such as excising the clitoris, lengthening of the nymphæ, sewing up the vulva, and manipulation of the breasts. All these have been customary in various parts of the world and certainly affect maternity, whether favourably or harmfully.

There are two currents of thought and emotion associated with the genital organs (especially those of the female) in folklore, tradition, religion and custom. One is depreciatory and contemptuous, expressing disgust, horror and ridicule. Sex is considered here equivalent to dirt and indecency. Among the common people in every so-called civilised country to-day sexual terms are also terms of insult. This is even the case in certain Oriental communities, and on some of the Malayan islands the exclamation:

"By the genital organ of thy Mother!" is one of the most flagrant affronts that can be uttered.

Riedel,<sup>1</sup> to whom we are indebted for many of these data, has recorded that in Amboina and neighbouring islands the natives cut rough symbols of the vulva into their kalapa and other fruit trees (Fig. 241). This is done with a double purpose, in order to make the trees more fruitful (a form of "sympathetic magic") and as a spell to ward off robbers, for the symbols represent the parts through which the robbers were born.

Herodotus mentions similar figures carved on stone pillars set up by the Pharaoh Sesostris in Syrian Palestine to commemorate his victories over those peoples. Here there is not the sacred but the opprobrious significance and intention.

The ancient culture of Easter Island in the Pacific commemorated and depicted the vulva with reverence, according to Geiseler. There were many such

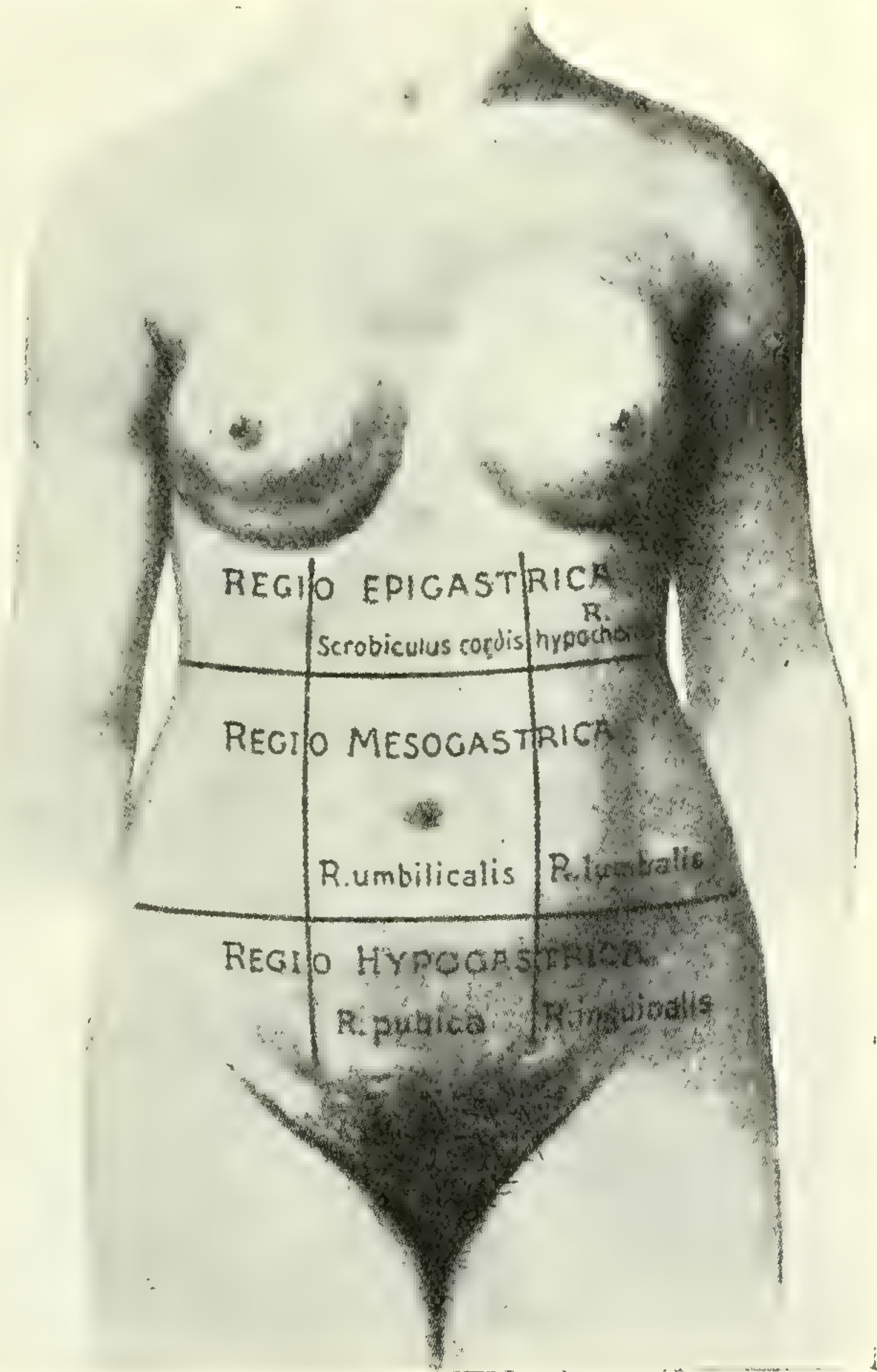


FIG. 240.—The abdominal areas in woman.  
(After Polano.)

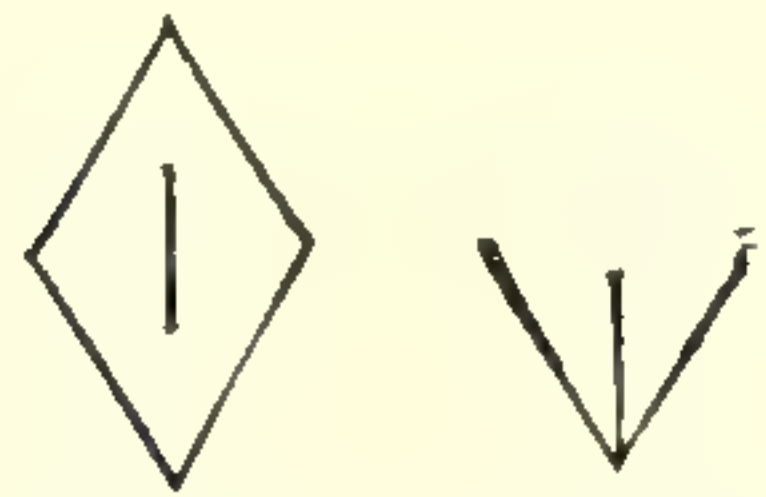


FIG. 241.—Schematic representation of the vulva for protective purposes on fruit trees (Amboina Islands). (After Riedel.)



sculptures and motive plaques, and the crew of the German vessel *Hyäne* brought several specimens with them.

It has been stated that these representations always accompany the figure of

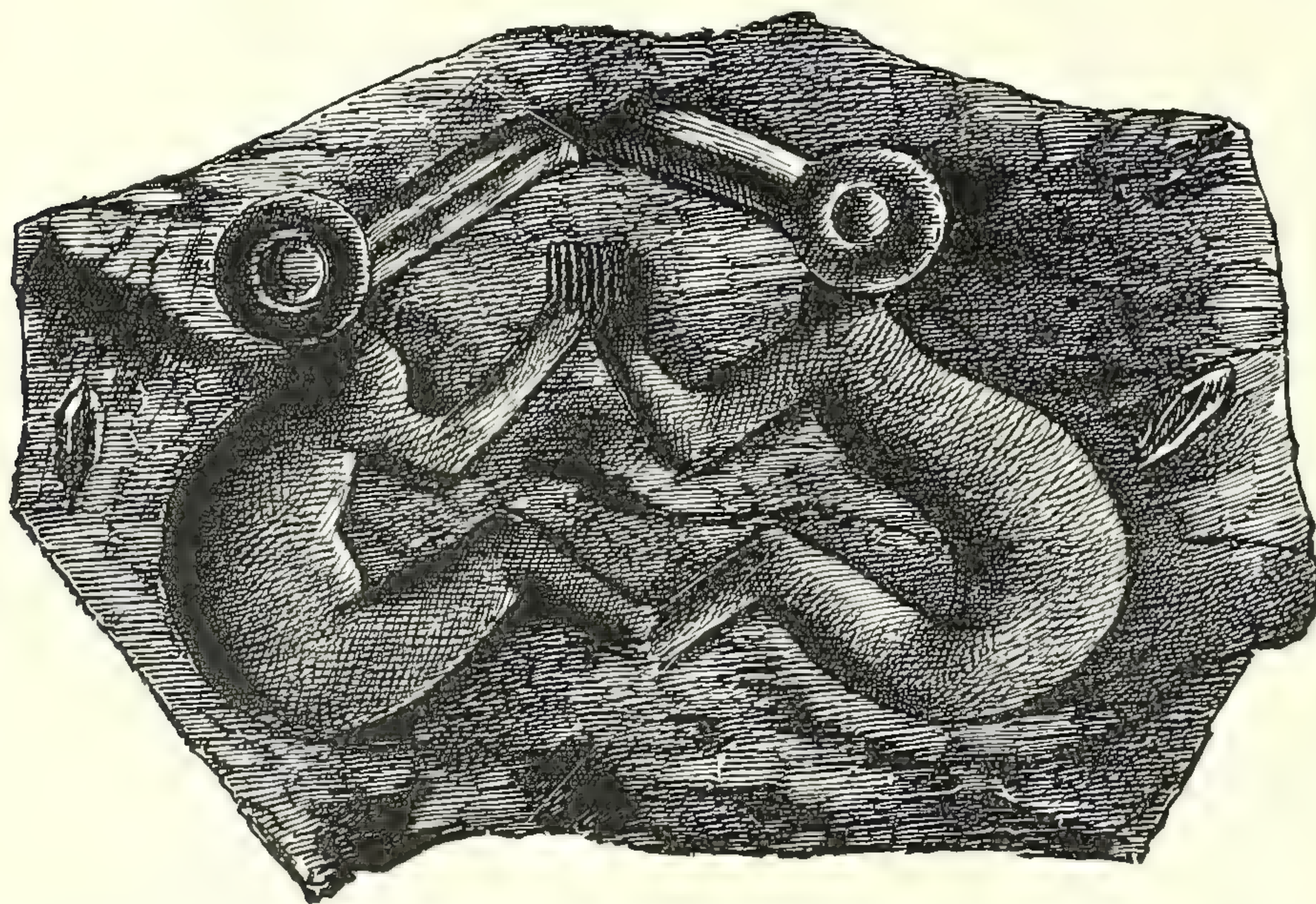


FIG. 242.—Representation of Make-Make, God of Eggs, with vulvæ. Stone 0.45 m. high and 0.64 m. wide, Easter Island. (After Geiseler.)

Make-Make, the duplex and bi-sexual deity who presides over eggs ; includes male and female ; and signifies the birth of a child when represented together with the vulva symbol, and, indeed, the birth of a child conceived in wedlock (Fig. 242).

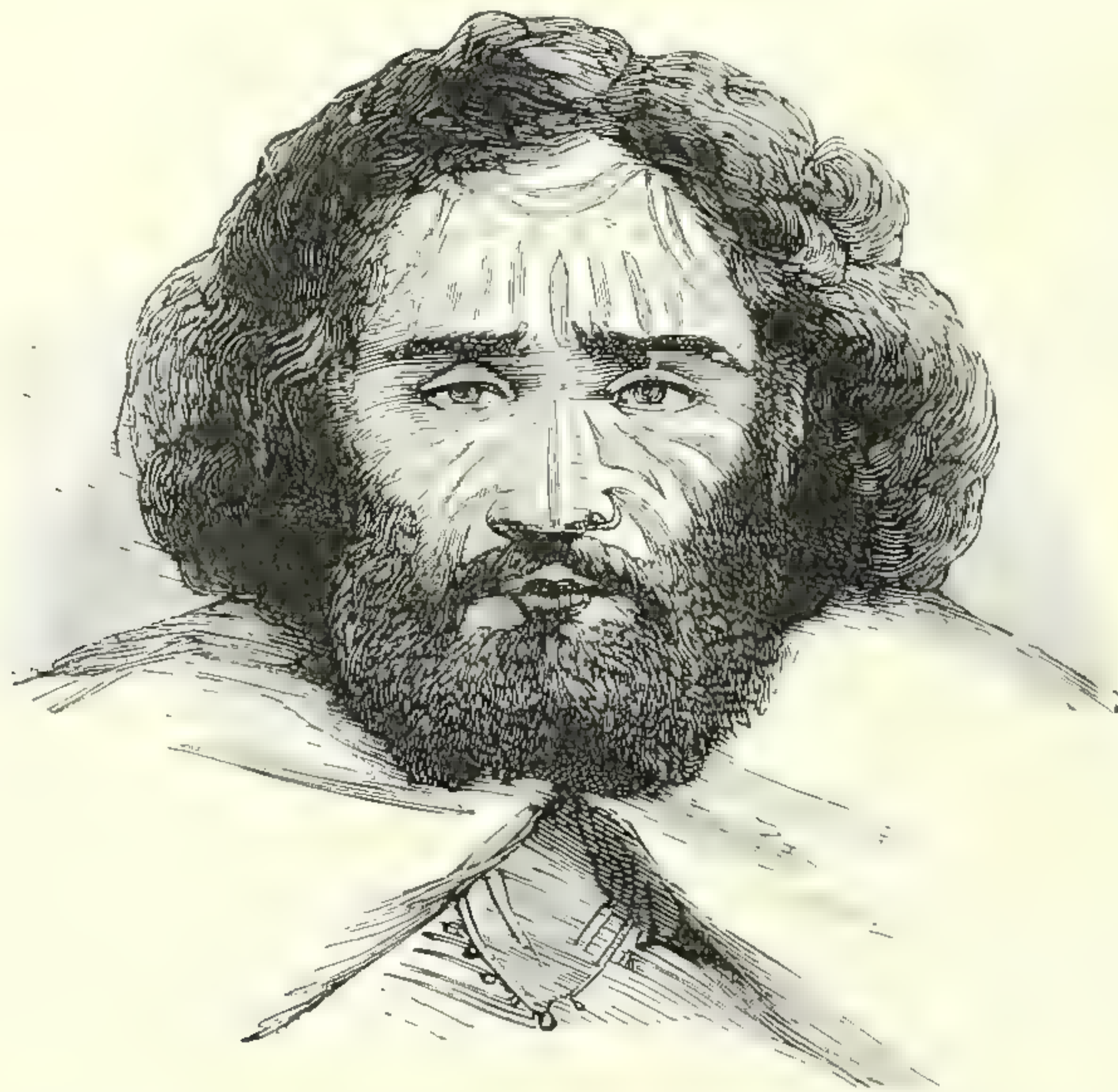


FIG. 243.—Native of Easter Island with the sign of his marriage tattooed on his chest. (After Viaud.)

The Easter Islanders preserved a further most interesting custom in their chieftain's families. When a man of chieftain's rank married he had the vulva



symbol tattooed on his chest just under the collar bone, about 2 in. long, in order to prove publicly that he was a husband (Fig. 243).

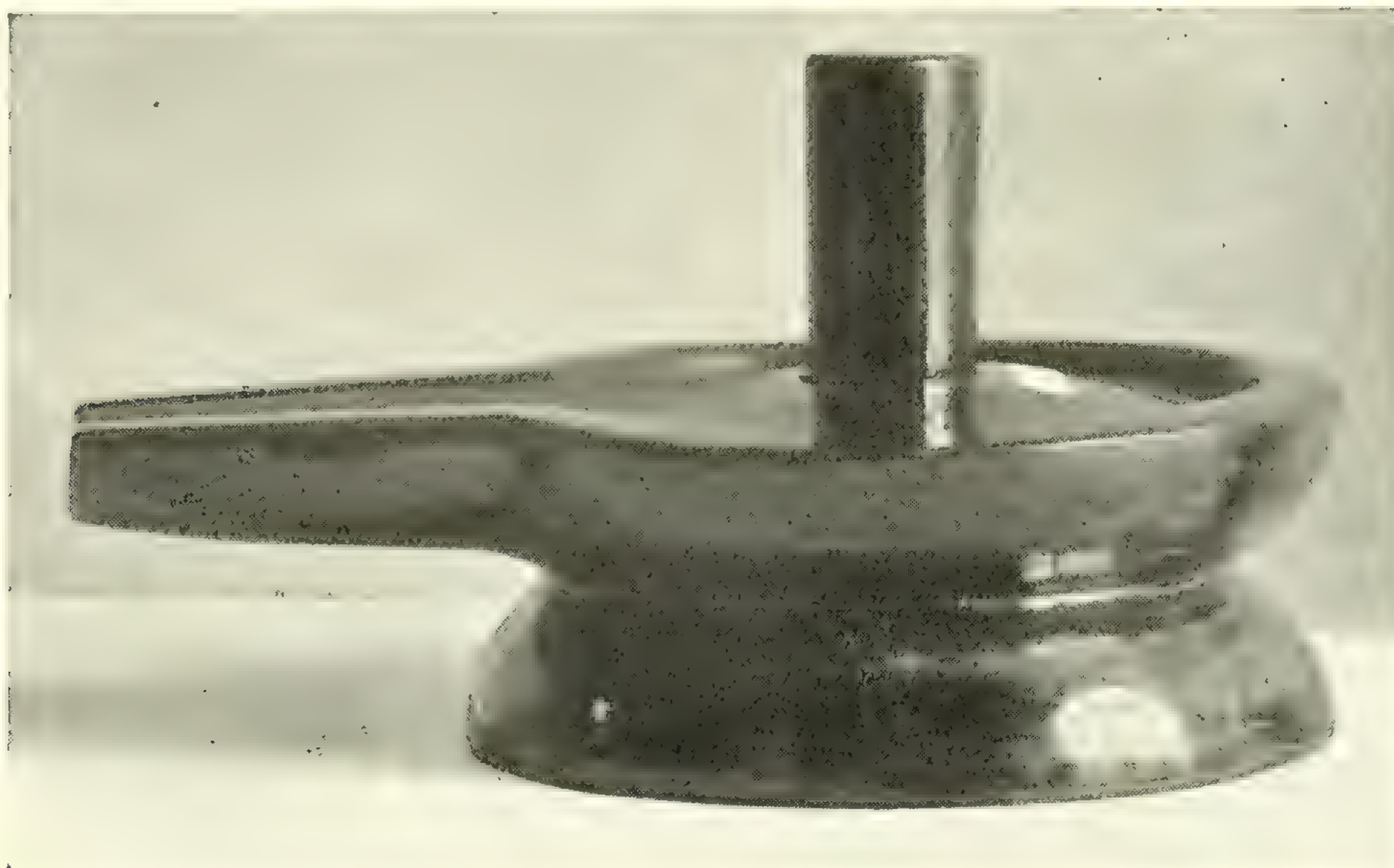


FIG. 244.—Linga-Yoni

In many parts of Hindustan, the feminine *Yoni* receives divine honours, like the masculine *Linga* (cf. Dulaure, Foy, etc.). They are frequently represented

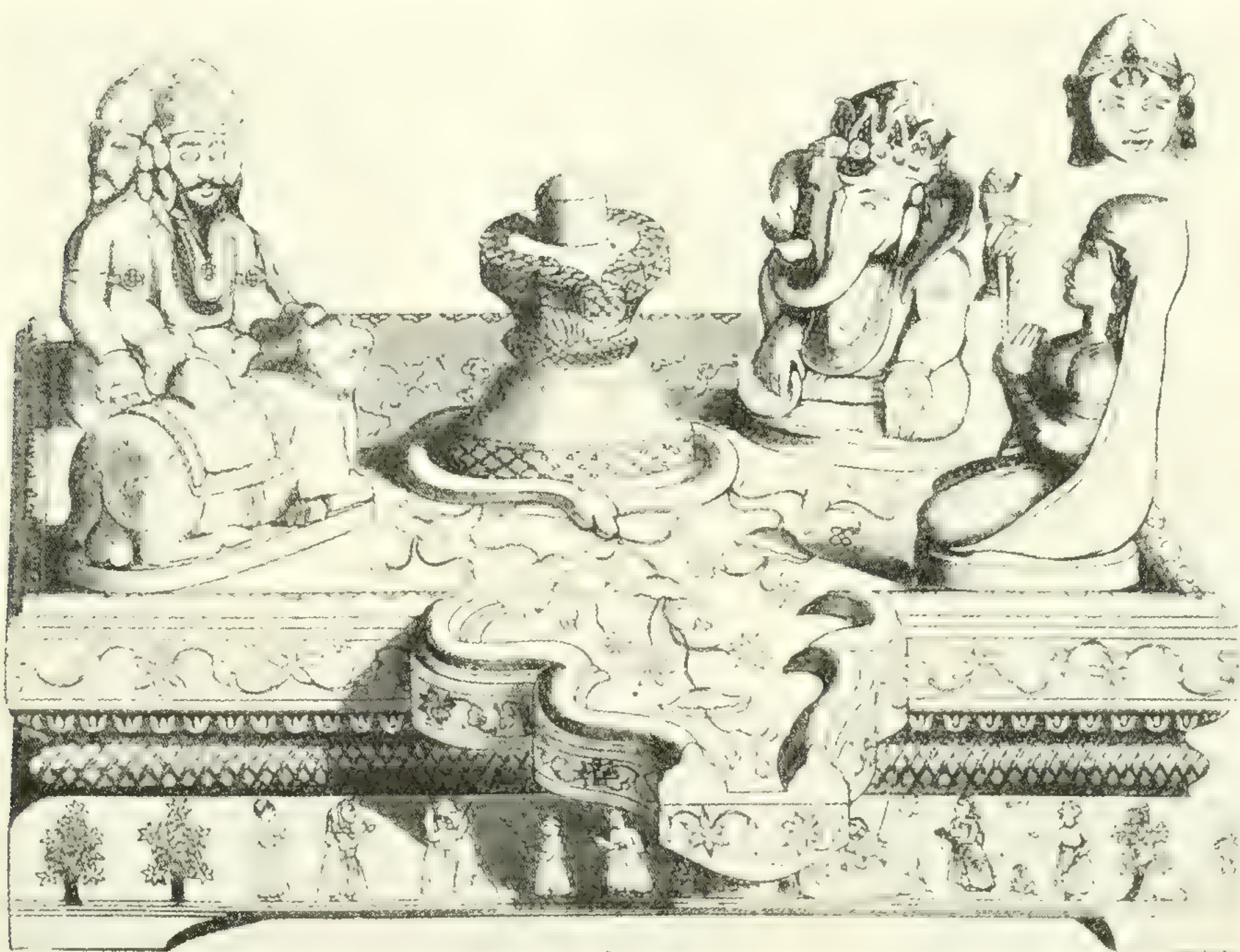


FIG. 245.—Linga-Yoni. Portable temple from near Rohilla. (Brit. Mus.)

together in Hindu art in the shape of an oval or rounded disc, in the centre of which is a short blunt rod (cf. Figs. 244 and 245). The rod is the symbol of *Mahādeva*



or *Shiva*, the male principle throughout nature ; the *Yoni* portion is the symbol of *Bharani* or *Kali*, his divine spouse, the mother of all living, and the female principle throughout nature.

There is, however, no doubt that the genital and phallic element in primitive art and archæology has been greatly over-estimated. At one time, especially, a phallic meaning was read into the most unlikely and impossible objects and monuments. In India this interpretation is, however, often justified, and sexual representations of a symbolic kind are distributed over wide areas.

In China there is also, according to some writers, widespread symbolism of the genital organs. They are represented as Yang (♂) and Yin (♀) and are, states Katscher, attached to the walls or doors of houses, or above the lintels



FIG. 246.—Zulu girls. The one seated with her back to the observer exhibits two sacral dimples.

in order to avert ill-luck. Gray and Eng have cited striking examples of these customs and beliefs, but H. A. Giles<sup>2</sup> states that he never saw them in 27 years in China.

Riedel has given a curious little instance of symbolism from the Island of Wetar (Wetta). If a Wetar woman is attracted to any man she sends him a little round box, full of tobacco and wrapped in a koli leaf, as a gift. But the gift implies more than tobacco ; by presenting a box she offers herself.

Hitherto, anthropologists have zealously enquired, collected and collated craniological and physiognomical data about all the races of mankind. But, in all probability there are not more ethnical and individual differences in heads and faces than in the whole genital region of women, internal and external. It is exceedingly difficult to obtain adequate and accurate statements and measurements on this subject, but such facts as are known to us are sufficiently important to be recorded in these pages.



## 2. LEGENDS AS TO THE ORIGIN OF THE FEMALE ORGANS

There are various explanations in primitive folklore of the origin of the sex organs. For instance, the Southern Slavs, according to Krauss,<sup>17</sup> declare that St. Elias "clove the woman through the middle and the cleft remains to this day."

Pechuel-Loesche<sup>1</sup> reports a legend of the Bakongo negroes on the Loango Coast as follows: Nzambi, the Creator, left a kola-nut about, and the first woman warned her partner not to eat of it.

"Nzambi praised the woman's steadfastness but he did not wish her to be stronger than the man, that did not please him. So he cut her open and took out some of her bones, making her smaller and softer to touch. Then he sewed her together again, but with too short a thread, so a piece remains open to this day."

There is a similar legend, states Krämer, obviously meant partly in jest, among the Samoans. In this story the girl, Popoto, and the three men who try to mate with her, have the names of mountains: Mangafolau, Tofua-upolu and Masa. Finally, Masa "cleaves through her with a shark's tooth" (the weapons, swords and spears of the islanders are decorated with shark's teeth). Krämer, who gives the story in full, is of opinion that "it symbolises the origin of the first woman."

Roth<sup>5</sup> states that the Australian blacks on Tully River in Queensland believe that men and women "came out of" that river in the beginning of things and there was, at first, no special difference between them. Then the spear grass that grows on the banks became the male organ and the long wandering on the river banks gave the girls their *labia majora*.

The Queenslanders also believe that the Great Spirit Anje-a made little children out of the moist clay of the river banks, and before he put them inside their mother's bodies he "clove open" the girl children on a wooden fork.

Similarly, on Prosperpine River (Australia), the natives believe that in the beginning Kahara, the moon, made man and woman. He was formed of the metallic ore of meteor stones (thunderbolts); she of the wood of the fruitful beech tree. The man was finished by being rubbed all over with black-and-white ashes and provided with a projecting piece of Pandanus root. The woman was made smooth and supple by being "oiled" with river slime and yam juice and a ripe pandanus fruit was placed inside her body,



FIG. 247.—Javanese girl with sacral dimples. (Anthrop. Ges., Berlin.)



and finally, she was cleft open with a slice of pandanus root : " So that they could be told apart."

### 3. THE FEMALE PELVIS, ANTHROPOLOGICALLY CONSIDERED

In the bony system of mankind the two most important regions for anthropology are the skull and the pelvis.

In woman the pelvis not only contains and supports the abdominal viscera and trunk respectively, but encloses the uterus, tubes, ovaries and vagina, as well as the adjacent organs. When the woman becomes pregnant the structure of the pelvis is enormously important for the ante-natal development and the delivery of the new life within her. There are marked differences between the pelves of man



FIG. 248.—Spanish woman showing area of the lozenge of Michaelis.

and woman ; and the distinctive characteristics of the female pelvis are based on the need to contain the child's body and to bring it forth. In a previous chapter we have discussed the chief anatomical sex differences (Chapter I., 3) and shall take these explanations as read. The special technique of pelvic measurements on the living body is somewhat complicated, and we refer those interested to the summary by Waldeyer<sup>5</sup> and similar works.

We have discussed the bony structure of the pelvis and shall deal more fully with the genital zone : here we shall deal especially with two features particularly frequent among women : the sacral dimples and the so-called lozenge or rhomboid of Michaelis, who dealt fully with this area.

The illustrations (Figs. 246 and 247) appended, especially the Javanese girl, show clearly what is meant by the sacral dimples.

According to Waldeyer,<sup>5</sup> these dimples are produced by a small oval plate of bone which is free from muscular tendons and just above the superior spina iliaca posterior. The dimples are apt to be much deeper in women. Waldeyer terms



them *fossulae lumbales laterales inferiores*. There is, occasionally, a third dimple, of which, however, Waldeyer has seen only *one* example among women. It lies higher on the iliac crest and corresponds to the point at which the sacrospinal muscle is attached. These lumbar or sacral dimples, according to Stratz, are normal in



FIG. 249.—Mulatto girl showing sacral dimples. (Photo, C. Günther.)

women but are only visible in between 18 and 25 per cent. of men. In women they are deeper, more circular and more distinct.

Finally, it may be said that in the male four dimples may often be observed, the two additional ones being over the ordinary two and corresponding to posterior superior spines. Moreover, another distinct dimple is occasionally seen in both



sexes. This is seated at the inferior apex of the rhomboid of Michaelis at the beginning of the gluteal cleft. In addition to the works already cited the notes by Müllerheim and Béna may be found useful, as also the illustrations in Black's "The Body Beautiful," Figs. 28, 118, 119-121.



FIG. 250.—Spanish model showing convex type of lozenge of Michaelis.

The classic world knew them well and depicted them in their works of art. The poets also praised them, and under the same name as facial dimples, *i.e.*, γελασῖνοι. They are mentioned by Rufinus (Anth. G.) in his account of the judgment of Paris, and by the Greek, Alciphron (I., 39), in the contest of beauty between Myrrhine and Thryallis. [T. Bell, in his "Kalogynomia" declared that their absence was





FIG. 251.—Austrian girl with lozenge of Michaelis.

a defect from the point of view of beauty, and Alexander Walker followed him in the same opinion. Boucher was a painter who specialised in dimples (see Laignel-Lavastine).]

The line between the two sacral dimples forms the base of a triangle, of which the apex is directed downwards just at the lowest extremity of the sacrum, and the



sides are formed by the projecting contours of the buttocks. It is termed the sacral triangle, and there is another possible definite triangular area just above the first, with the same base, but apex in the opposite (upward) direction and sometimes marked by a dimple. This whole area is the lozenge of Michaelis, the size and prominence of which vary greatly in different individuals.\*

This lumbar area, which is quadrilateral instead of triangular, is shown in the photograph (reproduced in Fig. 251) representing a Viennese artist's model.

There is also a recumbent figure of a Spanish woman (Fig. 248), which shows the sacral triangle, and the same is the case in another photograph of the same woman (Fig. 250) with quadrilateral area clearly defined and deep dimple at the superior apex. And she has another striking sacral characteristic: the strong convex curve of this whole area, a peculiarity also shown in the young mulatto girl depicted in Fig. 249.

Stratz considers this sacral area very important as being combined with and symptomatic of various grades of pelvic development. He considers the ideal "sacral area" to be quadrilateral rather than triangular and to be always accompanied by a wide diagonal conjugate, quite independently of all the other exterior pelvic measurements. The longer the vertical axis of the sacral area, the less does the promontorium project internally; and the longer the horizontal axis, the wider must the sacrum be. And there results a spacious, normally proportioned pelvis, apt for maternity. Stratz<sup>5</sup> estimates the ideally desirable distance between the opposite points of the sacral quadrilateral, as (independently of other measurements and even of race) from 10 to 11 cm. He suggests that obstetricians as well as anthropologists should pay special heed to these proportions.

Without compass and measuring tape the unaided vision is able to distinguish differences in the pelvic dimensions of various races. Sömmering was one of the first to make exact measurements here. Vrolik did important work in comparative anatomy, measuring the pelves of Negresses, Bushwomen and Javanese. M. J. Weber of Bonn tried, somewhat prematurely, and on insufficient material, to group pelvic types on an ethnical basis. He believed that the skull was the key to the pelvis and classified the types as oval (Caucasian), quadrilateral (Mongolian), round (Amerind) and wedge-shaped or triangular (African). Since then we have learnt much, but, as Ploss has elsewhere stressed, not yet enough. There is no agreed standard of measurement. Balandin, the Russian investigator, has pronounced the measurements hitherto adopted as insufficient, qualitatively and quantitatively, for the establishment of a standard of normality. He referred to European material alone and did not touch on ethnical differences throughout mankind. The most questionable measurement hitherto has been the habit of taking the transverse diameter of the pelvic inlet as the test of pelvic capacity. Contour, rather than actual capacity, is important. Zaaier considered the typical difference was between the "round" and the "long oval" inlet and C. Martin suggested a grouping of:

- (1) Pelves with round or circular inlet, said to be found among the American Indians, the Australian aborigines and the Oceanians of the South Seas and Malaysia.
- (2) Pelves with oval inlets, found in African and European women.

These important measurements are not, however, the only racial characteristics, but the different regions of the pelvis are also typical; especially the iliac fossæ, which are distinctly reminiscent of anthropoid pelves in some races (*cf.* Vrolik, Pruner, Carl Vogt, etc.). Other authorities think the sacral formation of primary

\* Jarcho in his recent study of the pelvis has pointed out that the shape of the rhomboid varies considerably according to the type of pelvis. Thus in the masculine type or "funnel" pelvis, the rhomboid is narrowed, whilst in the rachitic pelvis the reverse is the case.



importance. Bacarisse estimates the width of the sacrum as greatest in the white race, then in the yellow race, and least in the black. There is great variety in the vertical measurement here. The African negroes have the greatest height among the sacra with six sacral vertebræ, the Europeans among those with five. The sacral curvature is most marked in white races, especially Europeans, and the flattest in black races.

Radlauer declares that the European sacrum is both relatively and absolutely larger than that of coloured races. W. Turner has suggested that the sacral region of various types be divided thus :

- (1) Dolichohieric : with the index under 100.
- (2) Sub-platyhieric : with index between 100 and 106.
- (3) Platyhieric : with index over 106.

Radlauer reckons the Bushmen, Malays and Chinese in the first group ; the negroes, Ainu and some Japanese in the second, and the aboriginal women of Australia and Japan as well as the Europeans in the third.

He also points out that the curvature of the frontal surface of the sacral bone is much greater among the lower simian species than in anthropoids and human beings.

Le Damany measured the sacropelvic angles in some 1700 cases, and concluded that in all mammals, except the anthropoids, the angle was very constant at about  $55^{\circ}$ .

In gorillas and chimpanzees . . . . .	$60^{\circ}$
In the orang . . . . .	$70^{\circ}$
In the human embryo . . . . .	$55^{\circ}$ to $65^{\circ}$
In the human adult . . . . .	About $90^{\circ}$
In negroes . . . . .	Males ( $\sigma$ ) $90^{\circ}$ , females ( $\phi$ ) $98^{\circ}$ .
In the yellow races . . . . .	$\sigma$ $92^{\circ}$ , $\phi$ $100^{\circ}$
In the white races . . . . .	$\sigma$ $100^{\circ}$ , $\phi$ $104^{\circ}$

A later series of measurements gave a decreased sexual differentiation : 167 men were measured and the result was  $107^{\circ}$ , and in 120 women the result was  $108^{\circ}$ . Riggs confirms the opinion that the pelvis of the white race is wide and shallow, compared with the narrow and relatively deep pelvis of the coloured people.

The Japanese, Ogata, made an interesting comparative study of the female pelvis in terms of the ratio of external pelvic measurements to height of stature. His results were as follows, based on the measurements of 725 Japanese women :

	In the Japanese Woman.	In the German Woman.
Conj. Ext. (lumbo-pubic depth) . . . . .	12.314	12.66
Spinal breadth . . . . .	15.723	15.83
Cristal breadth . . . . .	17.442	17.72
Bitrochanteric breadth . . . . .	19.139	20.15
Diagonal diameter . . . . .	13.782	13.93
Pelvic circumference . . . . .	52.555	56.44
Height . . . . .	100	100

Thus the Japanese woman's pelvis is both relatively and absolutely smaller than the German. Koganei and Osawa have also dealt in detail with the pelvis of both Japanese and Ainu.

There are also undoubtedly special racial differences in pelvic inclination, namely, the angle and position of the pelvis to the axis of the trunk. Broca drew attention to them and suggested an instrument for their exact estimate. Hennig



also pursued such investigations on racial lines. But Prochownick, who had his own method, came to the conclusion that individual differences were so great that comparative ethnology could not do much with the material.

Even in different racial stocks living in the same territory, the pelvis shows appreciable differences. Schröter found the pelves of Esthonian and German women more powerfully developed than those of the Poles and Jewesses; and he found the Jewish pelvic measurements the smallest of all. In the material he investigated he found the German women had the strongest pelvic inclination, the Poles the next, the Jewesses the next and the Esthonians the least. But the pelvic inclination is not always constant and invariable even in the same person, for position and attitude make much difference here. Up to the present time, we have no proof that the various attitudes during parturition customary in various races are, in any way, due to differences of pelvic inclination.

For further facts the reader may be referred to the work of Vrolik, Zaaier, A. Weisbach, Carl Martin, O. Franqué, Verneau, Wernich, H. and G. Fritsch, A. Filatoff, A. v. Schrenck, Minassian, H. Ellis, Derry, etc., who deal with ethnical differences common to both sexes.

With regard to children, Weissenberg made measurements of 2576 Russian citizens of Hebrew race: 1366 boys, 1210 girls. He found that, at birth, and till the eighth year, the boy had slightly wider hips than the girl; after nine years, the female pelvis grows the wider. A fact that Konikoff has also confirmed. This is also the age at which girls take a sudden spurt in growth and often surpass the boys of the same age in height. At 15, the boys become and remain the taller, but the width of hip remains greater in woman through life. This measurement increases most of all in the first two years of infancy, and has its next spurt of growth in woman as mentioned above. Male width of hip grows steadily from 20 to 50 years, reaching its maximum of 280 mm. at that age. And the woman's again increases from 20 to 50, reaching its maximum of 289 mm. then. Thus,

from 20 to 50, the feminine hip measurement grows thrice as vigorously as the masculine (increase ♀ 14 mm., ♂ 5 mm.). After 50, there is a slight decrease in both sexes. Le Damany<sup>2</sup> found a remarkable sexual difference in the much greater diameter through the body from front to rear at the level of the *spinæ iliacæ anteriores superiores* in girls at birth.

There can be no doubt whatever that habits, customs and diet have great influence on pelvic structure individually and racially. The amount of bone-building nutriment obtained is crucial. G. Fritsch found the whole frame very undersized and the pelvic bones badly developed in the Bushwomen and Hottentots, and the sex differences were partly obliterated. There is confirmatory evidence that the pelves of negro women in the U.S.A., who have been accustomed to more abundant food and easier habits of life, have begun to approximate to the European type, owing to greater solidity and capacity of their bones.



FIG. 252.—Bedouin woman with child on her back.



Habitual and persistent positions and attitudes of the body and corresponding muscular effort or atrophy have also certainly some effect. Thus Bertherand found



FIG. 253.—Negress from Dahomey carrying her child, 1-year-old, on her back. (Photo, C. Günther, Berlin.)

that the Arab women in Algeria had very widely opened pelves. He concluded that this characteristic had three main reasons: (1) The habit of carrying the children on their mother's back (*cf.* Fig. 252); (2) much riding from childhood; (3) The seated attitude with crossed legs.



Ogata took measurements of 725 Japanese women during life in order to compare results among the leisured and the wage-earners. He found that in all seven pelvic measurements the Japanese woman of the working classes was more robustly developed than in the leisured and wealthy strata. The differences were roughly equivalent to those between the Japanese working woman and the German.

Epp often found high and narrow pelvises among Chinese women, which he attributes to their very sedentary way of life. Unfortunately, he is in complete disagreement with Mondière who found the Chinese woman's pelvis exceptionally capacious in all its measurements. All these disputed details must be further elucidated, together with possible causes, such as the way young children are carried or allowed to crawl, or progress in a seated posture, while their bones are in a cartilaginous soft condition. Schliephake, among other authorities, dissents



FIG. 254.—Ancient Peruvian vase. (Mus. d. Völkerk., Berlin.)

from the view that the tension of the muscles and weight of the trunk modify the pelvic form to any extent; nor, so he thinks, have the thighs much effect through lateral pressure. He believes that the adult structure of the pelvis is constitutional and congenitally determined and can only be influenced by the factors above mentioned to a very slight degree.

In many parts of Africa the mothers carry their babies and little children riding on their backs, across the loins and slung to them for safety (*cf.* Fig. 253). This means that the buttocks are inclined and protruded backwards in order to support the child's weight and that the vertebral column is curved inwards at the loins and the pelvic angle increased: there is lordosis, or "saddleback."

Hennig, Bérenger-Féraud and others have discussed this peculiarity and its mechanism. Probably the whole bony structure of loins and pelvis are modified by this habit of carrying the children, possibly first acquired, and then with time and use, intensified.

The custom is not peculiar to Africa. It is found among other races, and



depicted, *e.g.*, on a piece of pottery from Ancient Peru (Fig. 254). The child is clearly shown there, riding in a sling on its mother's buttocks. The same custom is found in Japan among women and young half-grown girls, and may be occasionally observed in England and the United States.

Does the accentuated curve of the lumbar vertebræ make birth more difficult and dangerous? We can only say that many women of Africa are reported to take



FIG. 255.—Grinding meal in Eritrea. (After Schweinfurth.)

an attitude in which the lumbar curvature is stretched and evened out so that the child meets less resistance. But Riggs has put on record that births last longer among the black races than the white; that they show fewer head presentations and fewer cases of easy labour. In white races, children at birth are, on the average, both longer (about  $1\frac{1}{2}$  cm.) and heavier (about 200 gm.), and with slightly larger heads than in black.

There is a further habit prevalent in the black race that probably accentuates both a tendency to lordosis and pelvic angle: that is the kneeling attitude in which



the women grind corn on stone rolling mills by hand. This is shown in Fig. 255, where a woman from Eritrea kneels, bending from the hips, and throws all her weight on her hands. And as she grinds backwards and forwards the lifted hips and buttocks must move rhythmically up and down, keeping the lumbar muscles in deliberate tension and motion. The South African girl from Natal (Fig. 256) is at the beginning of her forward stroke, so her body is upright and not in the quadrupedal posture. Corn grinding means a rapid and vigorous alternation of stretching and contracting of the lumbar and pelvic muscles, and its effect is heightened if the women carry their babies on their backs while at the mill.

This way of grinding meal has been practised in Africa for thousands of years :



FIG. 256.—South African girl from Natal grinding meal.

it is shown in many ancient Egyptian statuettes (*cf.* Fig. 257) of the Fourth Millennium B.C. (*circa* 3300). The figurine represents a young woman and the stone base on which she grinds is worn away. It is in the Museo Archeologico in Florence.

Le Damany's measurements tend towards the view that there are professional differences in pelvic angle in our race. Certainly, carrying heavy weights on the head and shoulders throws the buttocks into greater prominence. As to the influence on parturition, it will be necessary to enlist the observation and opinion of obstetricians as well as anthropologists, and obtain full material before we can form any estimate. In the third volume of this study we shall consider the process of birth in detail.

Moreover, head and shoulder measurements in the child, as well as pelvic angle and capacity in the mother, influence parturition, and should be taken into account in estimating anthropological and ethnical differences here.



The gluteal region and the thighs interact on the pelvis, and in the living body measurements round thighs, hips and groins help to indicate the bony measurements of the pelvis.

[Some simple external measurements of the latter are : (*a*) the distance between the anterior superior iliac spines ; (*b*) the intercrystal distance ; (*c*) the distance between the heads of the trochanters ; and (*d*) the external conjugate measured from the small depression at the last lumbar vertebra to the anterior upper margin of the symphysis pubis. The use of radiograms for the purpose of measurement

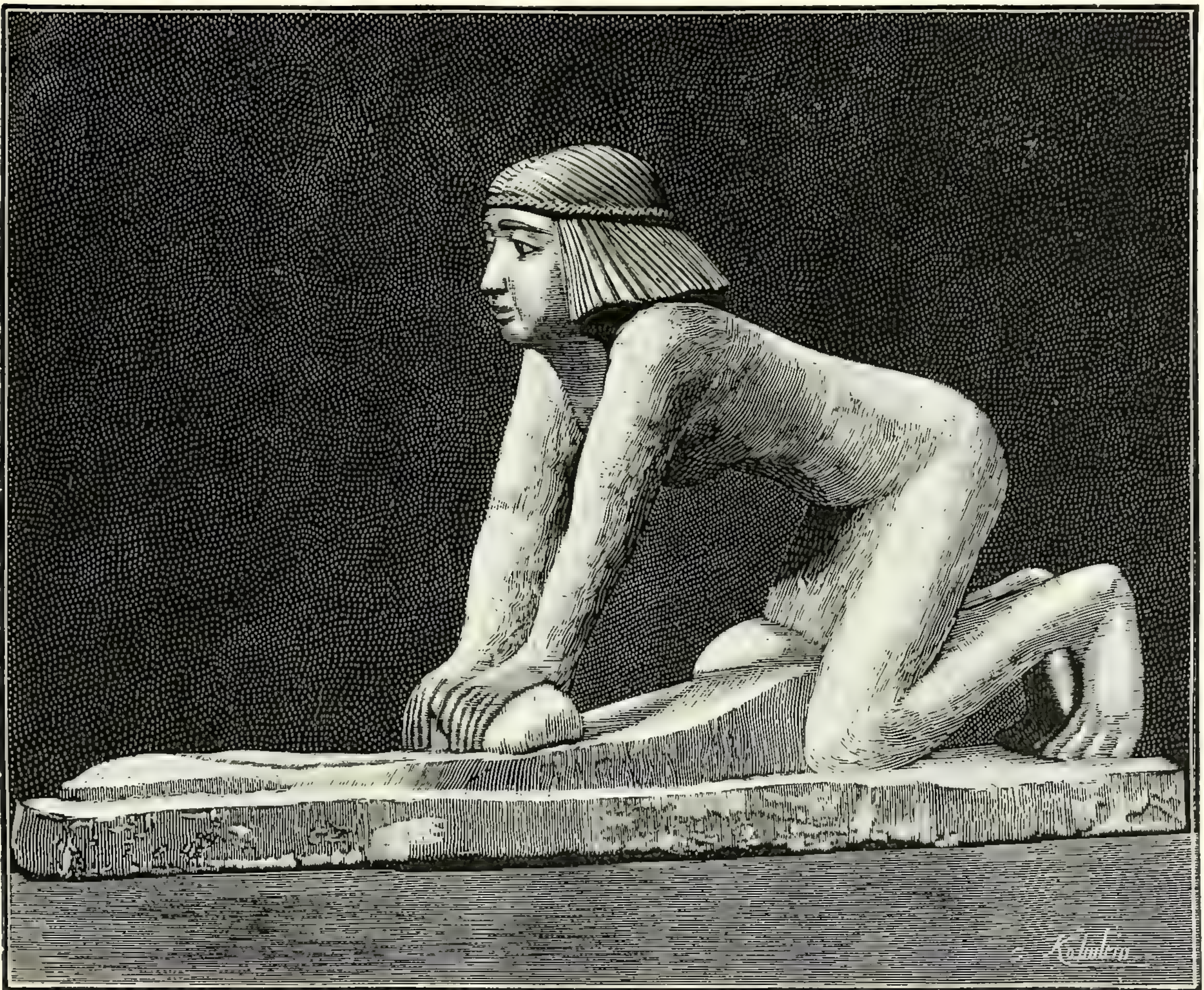


FIG. 257.—Grinding meal in ancient Egypt, 3300 B.C. (Mus. Arch., Florence.)

has certain disadvantages, but Thoms and H. Martius<sup>5</sup> have shown that useful results can be obtained from their use in the earlier stages of pregnancy.]

Certain formations of the iliac bones make wide pelves look narrow because they are closer together than usual. This is said to be the case with the Loango Coast negresses, according to Falkenstein,<sup>2</sup> who declares it is often difficult to distinguish the sexes when seen from the rear.

Paulitschke notes that the Somali and Galla women have very inclined pelves ; and Wolff says the same of the Congo women : “ The pelvis seems turned on its horizontal axis so that the buttocks protrude greatly, while the hips, even in women, are comparatively narrow.



Rochebrune found the Wolof women had "very mediocre pelvic development," and while their abdomen was curved forward in the upper half, it was almost



FIG. 258.—Viennese girl with short trunk and long legs.

straight in the lower without the slight outward undulant curve of the European woman.

Riedel<sup>1</sup> has cited cases of racial differences among neighbouring stocks in the



islands of the Malay Archipelago: wide pelves in the Babar Islands, narrow in Gorong and Ceram Laut.

There are also certain feminine figures which make an impression of almost fragile grace yet have great relative width of hip and posterior. Wernich, who was in charge of a gynæcological ward at Yeddo for some time, found this was the case

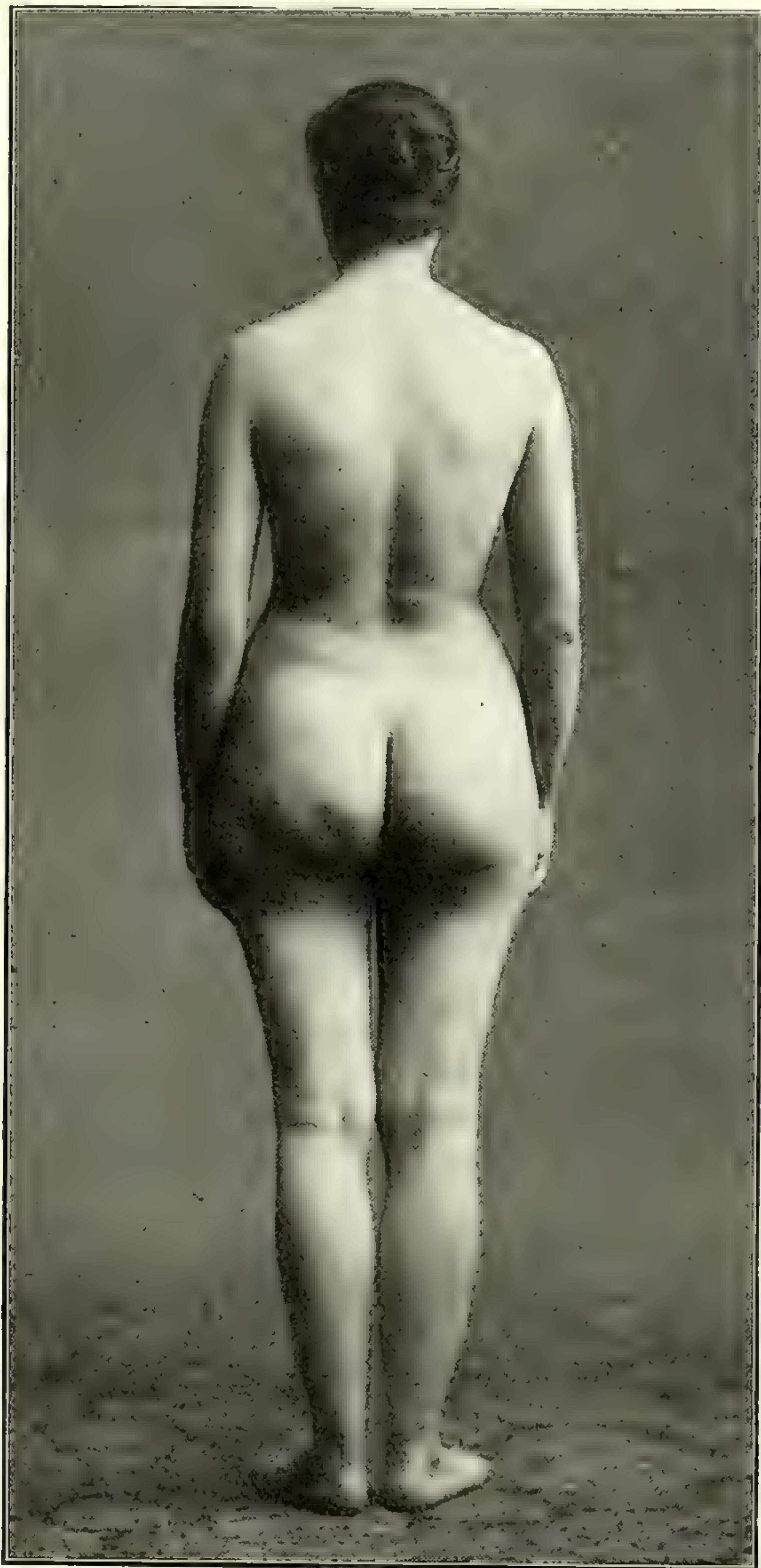


FIG. 259.—European girl (25 years). (Photo, Günther.)



FIG. 260.—Ashanti girl (16 years). The well-knit frame and firm buttocks are to be specially remarked (*cf.* Fig. 360 for view from in front). (Photo, Günther.)

with the Japanese women patients. Their pelves were capacious, and the angle of the symphysis pubis very wide and obtuse. On the other hand, according to von Baelz, broad buttocks are considered hideous in Japan; the smaller her pelvic region the more a woman is admired.

Again, Maurel ascribes to Cambodian women “very much developed buttocks and flat pubes.”



J. L. de Lanessau says of the Agni in Dahomey : " The women have prominent buttocks even amounting to some degree of steatopygia, which is not ungraceful in its effect as they walk " (*" qui n'est pas sans ajouter une grace à leur tournure "*).

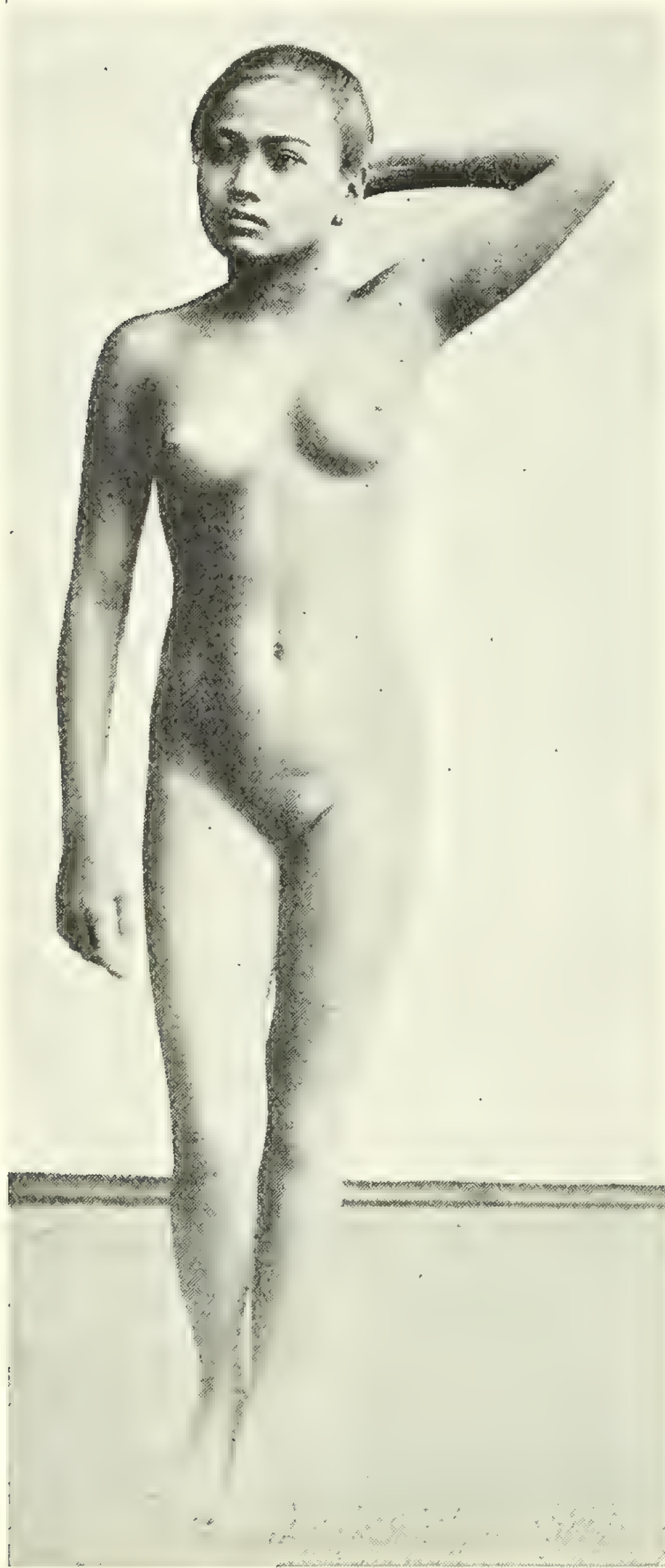


FIG. 261.—Girl from Java seen from in front. Fig. 247 shows her from behind. (Anthrop. Ges., Berlin.)

buttocks of the girl are fuller, more rounded and softer than those of the boy. His are closer knit and firmer to the touch. The deposit of fat is more easily seen in the short than in the tall woman. In the fat woman there is a tendency to sag, but even here there is little backward growth such as is seen in Bushwomen and Hottentots.

Viewed from behind, with the subject upright, the main feature is the gluteal cleft, whilst below, the gluteo-femoral folds are characteristic. The former commences at the lowest point (sometimes a distinct dimple) of the rhomboid of Michaelis. The gluteo-crural folds (which are occasionally doubled) run across the thigh, are slightly curved with an upward concavity and unite with the genito-crural folds.

#### 4. THE GLUTEAL REGION, ANTHROPOLOGICALLY CONSIDERED

The hips in women are not only accentuated by bony structure but by their greater or lesser amount of adipose tissue. Here there are individual differences even in one racial stock. But even the camera shows greater differences between races, and, checking these results with the reports of eye witnesses, we can have no doubt of ethnical differences in the gluteal region.

Nevertheless, the most frequent proportions among European women are averages between the extremes of deficiency in adipose tissue and excess : between contours which appear to us either undeveloped or the reverse. Moreover, the size of the gluteal region is very important in its general effect : in the balance and symmetry it gives—or does not give—to the length of limb and trunk.

An example of a short trunk and unusually long legs and hips is shown in the photograph of a Viennese girl (Fig. 258 ; cf. also the various ethnical types in Figs. 259–268).

[Before considering various ethnical differences some account of the female buttocks in the white subject may not be without interest.

Before puberty differences in the sexes are not easily perceived. With the broadening of the pelvis occurs the accumulation of adipose tissue in the girl, and, generally speaking, the two sexes are fairly distinct. The





FIG. 262.—German girl.



FIG. 263.—German girl.

(Photo, R. A. Giesecke.)

With the subject in the dorsal position with flexed thighs the gluteo-crural folds disappear and the same occurs in other positions.

At least six types of buttocks have been distinguished, but the variations are not important. The two main types are the rounded and the flat. The first type is characteristically *female*. The pads are smooth, firm and elastic. They can be most often observed in short, well-nourished and active young women. The flat type is more *male* in appearance. It is common in tall girls of slender figure and has been much admired at various times. In the case of certain rather plump, full buttocks, a number of dimples and depressions are occasionally to be observed





FIG. 264.—German girl.



FIG. 265.—German girl.

(Photo, R. A. Giesecke.)

in the skin. These are said to be due to fibrous filaments between the skin and the gluteal aponeurosis.]

The buttocks of Papuan women are very much developed, according to Friedrich Müller, and he attributes this to the constant climbing of their steep hills. Riedel<sup>1</sup> made the same observation on Buru women.

Krämer noticed that Samoan girls and women had very slightly defined gluteal-crural folds: less, indeed, than their menfolk.

Steller, in describing the Kamchadale, said the women had "round, small and firm buttocks."





FIG. 266.—German girl.



FIG. 267.—German girl.

(Photo, R. A. Giesecke.)

Baelz<sup>2</sup> reports that in those Japanese women whom he classifies as Korean-Manchurian in type :

“The hips are narrow and remarkably lacking in fat.” He describes the women as slenderly built with long, slim throats and faces and aquiline noses, delicate limbs and extremities, narrow shoulders and hips.

There is a great contrast in the figure of the Ashanti girl (of 16 years old) (Fig. 260), which is much more powerfully developed than that of the young, mature and plump European girl beside her (Fig. 259).



A. T. de Rochebrune measured 150 Wolof women and found their gluteal and pelvic measurements half way between the European average and the peculiar Bushman type.

He found the following measurements between the trochanters over the maximum circumference below the hips :

Bushwoman	.	.	.	0.791 m.
Wolof woman	.	.	.	0.678 m.
Europeans	.	.	.	0.644 m.

Gustav Nachtigal found graceful figures with well-shaped pelves among the Tibu women of Lake Chad. But the Bornu women had both strong pelvic inclination and excessive fat, which had a repulsive effect to some European eyes.

## 5. STEATOPYGIA

[Localised masses of fat on the body have long been of interest to medical science. Certain groups of animals possess these enlarged areas, and in the human species the example of the Bushmen of South Africa is of especial interest and importance. In this case there is an enormous accumulation upon the buttocks, mostly in females but sometimes in the males as well, only to a less extent. These elastic gluteal deposits are often present without any corresponding notable increase in the size of the thigh. The condition is known as steatopygia (,στέαρ fat, and πυχή rump).]

It has been observed to a peculiar degree among certain races in South Africa : the Bushmen, Koranna and Hottentots (very pronounced, according to E. H. L. Schwarz), whilst that of the Bornu, Wolof and Konde are, as it were, a transitional form. In steatopygous peoples the women are naturally the most conspicuous, and their peculiarity is said to begin at the earliest date—in childhood, not in puberty, as Blanchard, Le Vaillant and others have confirmed.

The males among Kalahari Bushmen, however, who were exhibited in Berlin under the name of “Farini’s Troglodytes,” had very large and prominent hindquarters, according to M. Bartels. In the females,

one little girl, indeed, eight years of age, almost equalled the mature men in this respect, thus confirming the appearance of steatopygia at an early stage in individual growth (*cf.* Fig. 268).



FIG. 268.—Eight-years-old Bushman girl with beginning of steatopygia.



It has been stated that steatopygia does not occur in persons of mixed European and Bushman or Hottentot blood. But apparently it is not universal even in apparently full-blooded Bush folk: for instance, among the Heikum and Kung, according to Werner. G. Fritsch states that the Hottentot woman is distinctly more steatopygous than the Bushwomen. But Livingstone maintained that there was a certain degree of steatopygia among some Boer woman. Thulié rejects this view so far as it refers to persons of unmixed blood and attributes any case that may occur to a streak of African or aboriginal blood.

The cause of steatopygy is not muscular but adipose, as has been demonstrated in many autopsies. The famous so-called "Hottentot Venus" described by Cuvier was steatopygous to a high degree; the measurement is given as 16.2 cm.



FIG. 269.—Hottentot women from Berseba with prominent steatopygia.

Flower and Murie examined the body of a Bushwoman 21 years old who died in England. She had lost the adipose deposit and her skin was lax and wrinkled. Luschka and Görtz made an autopsy on the woman "*Afandy*," described as of Bushman origin. The thickness of her adipose cushion when preserved in spirits for a year was between 4 and 4½ cm. at its maximum point, and the disposition of this extra layer of fat was not on the European plan but particularly marked over the glutæus maximus, so that the sides were proportionately flatter and the posterior more prominent than in the European woman, apart from the larger dimensions.

It is out of the question that the phenomenon of steatopygia can be mainly due to bony structure or pelvic inclination. Theophil Hahn<sup>2</sup> declares that the young Hottentot boys who were his playmates were steatopygous as well as the women; and that their dimensions waxed and waned according to the season, becoming "almost incredible" when the rains brought an abundance of game and roots for food.



Sokolovsky believes that human steatopygia is analogous to the layers of fat on the hind-quarters and tails of the fat-tailed sheep (*Ovis aries steatopyga*). He considers that they represent an adaptation to life on the African deserts, supplying



FIG. 270.—Two Hottentots with steatopygia.

nutriment to the system when exhausted by lack of food, and that steatopygia is intrinsic in the Bushfolk but acquired by selective elimination in the Hottentots.

[The view that these adipose accumulations are analogous to such fat deposits as those of the camel, zebu, *Phascologale Macdonnellensis* and the fat and broad-tailed sheep is doubtless correct (see Shattock and R. Hartmann). Here also we have to deal with a kind of food reserve which can be utilised in case of need. It must, however, be clearly understood that steatopygia is to be sharply distinguished



from any form of crural obesity, lordosis, or the result of a general fattening treatment as is common in parts of Africa.]

Certainly the impression that steatopygia (in its pronounced forms) makes on an unaccustomed European observer is extraordinary and æsthetically repulsive. Even the slighter protuberance common in some Bushwomen is ugly in our eyes. But the Hottentots themselves consider their steatopygia, which they term "*aredi*" supremely beautiful (Figs. 269–277).

[Of the various groups of Bushmen the southern probably represent the purest type. The head is mesocephalic and the nose very flat. The figure generally is not fat, indeed rather the reverse. The limbs are slender and the hands and feet small. In girls the breasts are firm and conical with erect nipples, but later they become flaccid and shrivelled. Amongst the Northern Bushmen steatopygia seldom occurs, according to Schapera, who, in any case, does not regard it as a racial peculiarity. Among the Hottentots, the buttocks, considered in relation to stature, are small. Their prominence is due to the steatopygia which is found more commonly among them than among the Bushmen. It is curious that three unusual physical characters should be found in these people: the accumulation of fat on the buttocks and the elongated labia minora among the women, and the state of apparent semi-erection of the penis in men. L. Schultze-Jena has recently dealt with the physical characteristics of these people and the reader may be directed to his work, and to the earlier accounts, *e.g.*, Vincent].

In profile, this particular structure shows very clearly and a further peculiarity is occasionally revealed, namely, a second adipose cushion in the regions of the two trochanters. This is found in both Hottentot and Bushwomen, and has been described by Topinard<sup>3</sup> and others as associated with steatopygia (Figs. 273–275).

The maximum width of the pelvic region is thus much further down than in Europeans, even just below the gluteo-crural fold between thighs and buttocks. The increase in thigh circumferences is in the upper part only; the lower thigh is not unusually thick.

This particular displacement of the maximum pelvic width from the area normal among Europeans is also found in many women of the white race (*cf.* Fig. 278). Thus the disposition of the gluteal cushion is of the same type, but the dimensions much less than in the primitive peoples we have described.



FIG. 271.—Pregnant Hottentot woman with steatopygia. (Photo, Lotz.)



Revoil mentions cases of steatopygia in describing the Somali and Berber people. Stuhlmann observed "a certain tendency" in this direction among the Pygmies whom he discovered in the Ituri district. He brought back two young



FIG. 272.—Hottentot woman of 22 years with steatopygia and crural obesity. (Photo, Sander and Roeschke.)



FIG. 273.—Hottentot woman with steatopygia and crural obesity. (Photo, Sander and Roeschke.)

Pygmy girls to Europe. On the one, Asmini, the buttocks were of very rounded proportions; the other, Shikanayo, was a genuine case of steatopygia.

There are in Europe cases of gluteal development so pronounced that they are almost steatopygous (*cf.* Fig. 282). But the structure is nothing like so extreme, though of great interest for comparative anthropology. In the early editions of this work, Bartels noted European cases. A. de Blasio has now pointed out that



these semi-steatopygous cases occur in women of Mediterranean race.\* Blasio recorded in detail the cases of two young women in their early 'twenties and practising prostitution in Naples; their steatopygia was pronounced and well known among their acquaintances, so much so that they were nicknamed "*la culietta*" and "*la culacchiona*" respectively. Both girls said they had been steatopygous since childhood but specially since puberty. Blasio says one was a Neapolitan by birth: the nationality of the other is not recorded. Atgier and Ujfalvy have also called attention to French and Greek cases.

Prehistory, ethnology and anthropology have equal interest in the origin and purpose of certain primitive works of art which have been discovered and



FIG. 274.—Bushwoman. (Anthrop. Ges., Berlin.)



FIG. 275.—Hottentot. (Anthrop. Ges., Berlin.)

recorded in increasing numbers and from various widely distant quarters. They are representations of the female figure, and they are likewise unmistakably steatopygous.

In the Thebian Temple of Dêr al-Baharî there was a relief of a Queen of Punt or Pevenet (Southern Arabia) which dates, according to E. Meyer, from c. 2000 B.C.

\* [I have seen only two examples of steatopygia apart from Bushmen and Hottentots. One was an American girl of mixed blood and the other a West Indian half-breed.]



in the reign of Menthu-hetep. Meyer believes the people of Punt were the ancestors of the Hamitic stocks (Somali, Galla, Masai, etc.) and the tribes of the Arabian desert and Lower Nubia (Fig. 280). The corpulence and projecting posterior of the Arabian princess are very different from the extreme slenderness of the Egyptians. F. von Luschan, however, is of opinion that we have here a case of rachitic dwarfism combined with obesity, for rolls of fat are to be observed in arms and legs.

[Similarly in the reliefs at Shindî are to be seen processions in which women are represented who are extremely obese. As has already been said, fat women are much admired in parts of Africa and, as we shall see later, they appear to have enjoyed similar admiration for many centuries. The distinction, however, between



FIG. 276.—Hottentot. (Anthrop. Ges., Berlin.)



FIG. 277.—Hottentot. (Anthrop. Ges., Berlin.)

*steatopygia* and fat buttocks due to general obesity must be carefully borne in mind (see Budge, Ruffer, Slomann, Regnault, and for a modern discussion of fat women, cf. Wangen and Scheuer).]

Africa has not a monopoly of steatopygous statuettes. They have been found both in Asia and Europe. Some anthropologists have interpreted these statuettes as proof of the existence of a prehistoric population in Europe and Asia, which had the specific physique of the Bushfolk and Hottentots. And the obvious conclusion has been drawn, but criticised by (*inter alia*) Cartailhac, who listed and compared the material available with valuable additions of his own discovery. Moreover, Piette found three remarkable ivory figurines at Brassempouy (Landes), all representing women, and all apparently dating from palæolithic times. One of the three was said to be definitely steatopygous, one less so, and the third not at all. Three more, but very roughly executed, statuettes of the same Age, were described



by Piette ; he found them at Baoussé-Roussé near Menton. Similar representations and statuettes are known from Malta (*cf.* A. Mayr and Zammit) and various parts



FIG. 278.—Excessive fat under the trochanters (Spanish girl).

of Thrace and Myria, from Butmir, Cucuteni and Sereth in Poland, from Greece and the Ægean Isles, especially Crete (see Macalister, Evans, Shattock, Dussaud). Among the hitherto uncatalogued and unexhibited treasures of the French National



collections in the Musée du Louvre, Cartailhac was able to report several specimens from Lydia, which displayed all transitional stages from extreme steatopygia to complete absence of this peculiarity. The same is the case in the collection brought by Morgan from Susa. The "Great Goddess" is sometimes represented as unmistakably steatopygous and sometimes the posterior fullness is merely indicated, and here, too, there are transitional types. Cartailhac concludes that we must not regard the statuettes as realistic representations, *i.e.*, as portraits, but that they are symbolic or typical, *i.e.*, more or less idealised or stereotyped, and that the artists who made them were attempting to emphasise the typically feminine roundness in an unmistakable fashion. Szombathy agrees, and to him we owe the discovery and preservation of the so-called "Venus of Willendorf," an Aurignacian work of art found in Austria (Fig. 281). He considers this figure to be an attempt at symbolic or æsthetic emphasis, not a portrait of any racial characteristic. Mosso concurs, but Paribeni is of a different opinion. In support of his view he reproduces a



FIG. 279.—Bongo woman with steatopygia.



FIG. 280.—Steatopygia (?) in an Arab Princess.

limestone figurine from *Adulis* (Eritrea, North-east Africa) which was found, together with a terra-cotta figurine of the same kind and a gold coin of King Israel of Axum, and is attributed to the sixth century B.C. He points out that steatopygia and obesity are not identical with fertility and not necessarily associated therewith. Certainly, in some of his specimens there is strong evidence of actual steatopygia and an apparent effort to portray it faithfully. Of course, it would be rash and premature to conclude that these statuettes represent a race allied to the Hottentots and Bushmen on their evidence alone, and, apart from human remains. Further information on ancient specimens showing steatopygia and similar conditions will be found in the work of Royer, Myres, Saint Périer, and in the *Bull. Soc. préhist. française*, 1924, 81–88 ; 1926, 183, 187, 374.

## 6. THE VULVOANAL REGION IN WOMAN AND ITS ANTHROPOLOGICAL CHARACTERISTICS

Anthropological and medical knowledge is undeniably imperfect in some directions, and the feminine sex organs are one of these. [The number of careful



observations have been few and, in spite of much anecdotal material, our knowledge of the general characteristics and variations even in the white races is very meagre. Before, therefore, examining the different forms among coloured peoples it may be

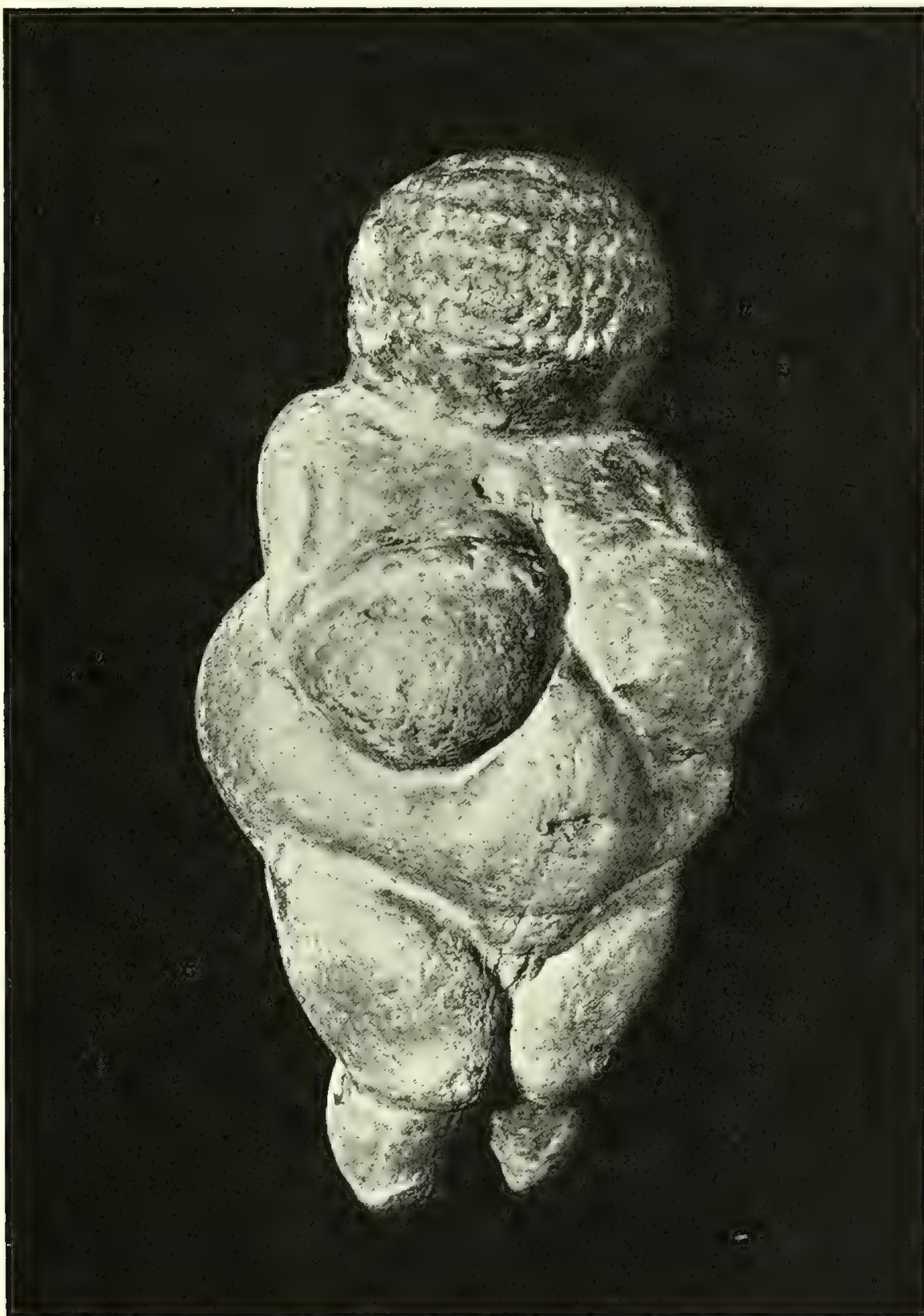


FIG. 281.—“Venus of Willendorf.”

of some service if a brief account is given here of the external sexual organs of the white woman.\*

The classical type is that described in anatomical text-books and usually represents the average vulva of the nullipara at full maturity. From the anthropological point of view, however, this is of little practical use. The female genitals vary enormously not only in different individuals but in the same individual at

\* For a recent work see R. L. Dickinson.<sup>3</sup>





FIG. 282.—Spanish woman with slight steatopygia (Barcelona).



different times. The vulva of a young girl differs from that after puberty. The vulva at menstruation in a nullipara differs from the vulva of gestation in a multipara. Here it will be convenient merely to give an outline sketch in order to stimulate interest in medical anthropologists and suggest lines of further observation and research.

The most important general characteristic is the *position* of the vulva. If an adult woman is placed in the supine position with legs extended and thighs together (*cf.* Fig. 5) the degree of visibility depends on the anterior or posterior position of the vulva. Generally speaking, in this position about one-third is visible. In girls before puberty this appearance is often mistaken for an unduly anterior position, as the vulva is more easily open to inspection owing to the lack of fatty development and hair on the mons and the manner in which the labia and clitoris often protrude (*cf.* Fig. 321).

If we take a normal young woman of average height and weight the following measurements were found by Jayle<sup>2</sup> to approach a fair approximation. In the dorsal position the total length from the summit of the mons to the centre of the anus was 12 cm. From the anterior limit to the clitoris, 4 cm.; from clitoris to fourchette, 5 cm.; from fourchette to anus, 3 cm. When the vulva is placed in a more posterior position visibility in front decreases and the perineum is often found to be somewhat narrowed.

The main difference in the various types of normal vulva are brought about by coitus and child-bearing. In the nullipara who has not had sexual intercourse or indulges but infrequently, the vulva is more contracted and elastic; and the inner aspect can only be observed by separating the labia. In the multipara and in the vulva of age the parts are more open and lax, and the labia less resistant and elastic.

If, in the supine position, the legs are raised and the thighs separated, and either lightly flexed or strongly flexed on the abdomen the whole vulval and anal region becomes visible. Yet even in this position in the young nullipara the inner structures are not easily observable except by separating the labia. The difference between the two types is immediately apparent.

In woman the *pubic hair* does not attain full development till some considerable time has elapsed after the first menstruation. The character and distribution of the hair is quite different in various types, as might have been expected from a consideration of the pilous system generally. Thus the vulva and anus of the brunette differ from those of the blonde, not only in the amount and distribution of the pubic hair but in the pigmentation of the skin. On the mons the hair is usually curly or frizzly. Occasionally tufts are present; but in very fair women the amount of hair in this region and below appears extremely sparse. The distribution varies according to the general condition. In some the hair extends upward towards the navel, some authorities putting 5 per cent. as the average figure. In the posterior direction, especially in brunettes, the hair thickly surrounds the vulva, extends to the anal margins and may be even found in the termination of the intergluteal fold. Jayle, among others, considers this posterior growth around the anus as unusual and suggestive of pseudo-hermaphroditism, whilst Waldeyer considers it far from rare. Similarly, the anterior extension upwards towards the navel has caused differences of opinion, due probably to the fact that the disputants were unaware of the practice of brunettes to remove hair from the abdomen and also from elsewhere.

In colour, pubic hair is often darker than the hair of the head in blondes; lighter in brunettes. Red-haired women have red pubic hair, although the latter



may be somewhat lighter. Few observations have been made on the average or individual length of the hair. In hirsuties exaggerated length has been reported, the hair sometimes reaching to the knees. The eyebrows are a useful guide to the paucity or otherwise of the pubic hair, a thick growth being very often accompanied by thick, curly pubic hair.

The *labia majora*, or outer lips, are of two types, the developed and the undeveloped. In the first they may be properly described as *lips* and conceal the inner structures almost entirely from view. In the second they are scarcely visible when the legs are strongly flexed and the clitoris and nymphæ are fully exposed.

The *labia minora*, or nymphæ, are of great importance to the anthropologist. We shall speak of the variations in different races in a later place. Even among white women these variations are considerable.\* Normally they consist of two folds with an average length of 3 cm. and average height of from 10 to 16 mm. They lie in close approximation, concavity upwards, and possess a serrated or indented edge. They are rich in sebaceous glands and are highly pigmented in brunettes. Anteriorly they converge and divide into two lamellæ. The precise anatomical relation they bear to the frenulum and prepuce of the clitoris is still disputed. Posteriorly they fade away into the tissue, or fuse together, and in some cases extend almost to the anus. Four types may be distinguished, the short, the membranous, the aleate and the hypertrophic. The second can be called the normal, the others being variations of it. Secondary folds have been described by Jayle and others, but in certain cases these have probably been due to folds in well-developed nymphæ which would have been obliterated by traction. Their elasticity and erectile quality have caused much discussion, in view of the hypertrophy to be discussed later. It is possible that a woman with large sensitive nymphæ may increase their size by manipulation and masturbation (*cf.* Fig. 118); and this hypertrophy might result from such manipulations if these were commenced very early in life. Experimental evidence is lacking, and it is difficult to see how it could be obtained.

Before passing from the nymphæ it may be mentioned that occasionally there are found on these structures what have been termed *papillæ genitales*, which appear at puberty and show erectility and great richness in nerve endings. They have not yet been carefully examined, but it has been thought by some that they have a close connection with the stimulation arising from the rubbing movements of coitus, and thus may be compared with the artificial aids of primitive peoples and the devices which are sometimes attached to condoms in our own civilisation (*cf.* Lipschütz, Buschke and Gumpert).

On separating and folding back the nymphæ the inner structures are exposed. Above, the *clitoris* is visible, the glans covered or not by the prepuce, which slides over it. It is the chief organ of sensation, and is rich in vessels and nerves. The roots vary from 3 to 4 cm. in length; when erect they are from 4.5 to 5 cm. long. Although it is capable of erection the clitoris cannot rise like its male homologue. It can merely swell and protrude under sexual excitement.

Marinelli declared that its sensitivity was so great that even the touch of an undergarment was sufficient to excite a woman to venereal ardour. The same view was expressed when the wearing of drawers became fashionable.

Between the glans and prepuce of the clitoris lies a small fold or pocket in which coagulates smegma. This, coupled with the other vulval secretions, gives the parts the peculiar *odour* which is of little anthropological interest, although of

\* *Cf.* Kuligowska.<sup>2</sup>



some importance in other directions. Van de Velde has dealt with this question in his "Ideal Marriage." More important to the anthropologist are the cases of hypertrophy of the clitoris and the relation of this condition to pseudo-hermaphroditism and nymphomania. Becker and Kranz, among others, have dealt fully with clitoridectomy, and M. Buch has made a special study of the relation of the clitoris to erotic conditions. The variations in coloured peoples will be considered later.

Below the clitoris lie the orifice of the *urethra* and the openings to *Skene's glands*. A considerable number of varied forms of the former are to be distinguished. Bergh described several, and Jayle has dealt with some seventeen shapes, varying from a mere slit to a large pouting meatus. Just inside and on either side of the urethral opening are the orifices of Skene's ducts.

Beneath the orifice of the urethra lies the *vaginal* opening, partially or wholly closed by the *hymen* in the virgin. This structure, which has led to interminable discussion, can only be fully seen after the nymphæ have been widely separated. Numerous forms are to be distinguished (*cf.* Figs. 54–58) of which more will be said later. Here we may merely direct attention to the works of Budin, Devilliers, Gaullier, Geering, Ledru, Tolberg, Götzfried, Cullingworth, Gellhorn, Taussig, Dohrn, Chavernac, Volta, etc.

The vagina has considerable variations in length, according to the position in which it is measured among other factors.\* Normally it is about 3 in. At the orifice there is a thin layer of muscular tissue which is of interest to the anthropologist for in certain persons constriction of this can be effected voluntarily, whereas in the majority action on this muscle is usually combined with powerful contractions of the levator ani. The education of this group of muscles controlling the vagina and anus in order to perfect certain kinds of erotic technique has received attention in various quarters (E. Martin, Van de Velde, Liebenstein, etc.). Their use and functions have long been known in erotic literature, and in Abyssinia such a woman is called "Kabbadah," a holder (see Fraxi,<sup>1</sup> p. 291).†

Below the vaginal opening lies the so-called *fossa navicularis*, and at either side of the vagina close against the medial sides of the labia minora lie the openings of the greater vestibular glands or glands of Bartholin. They are not easy to examine

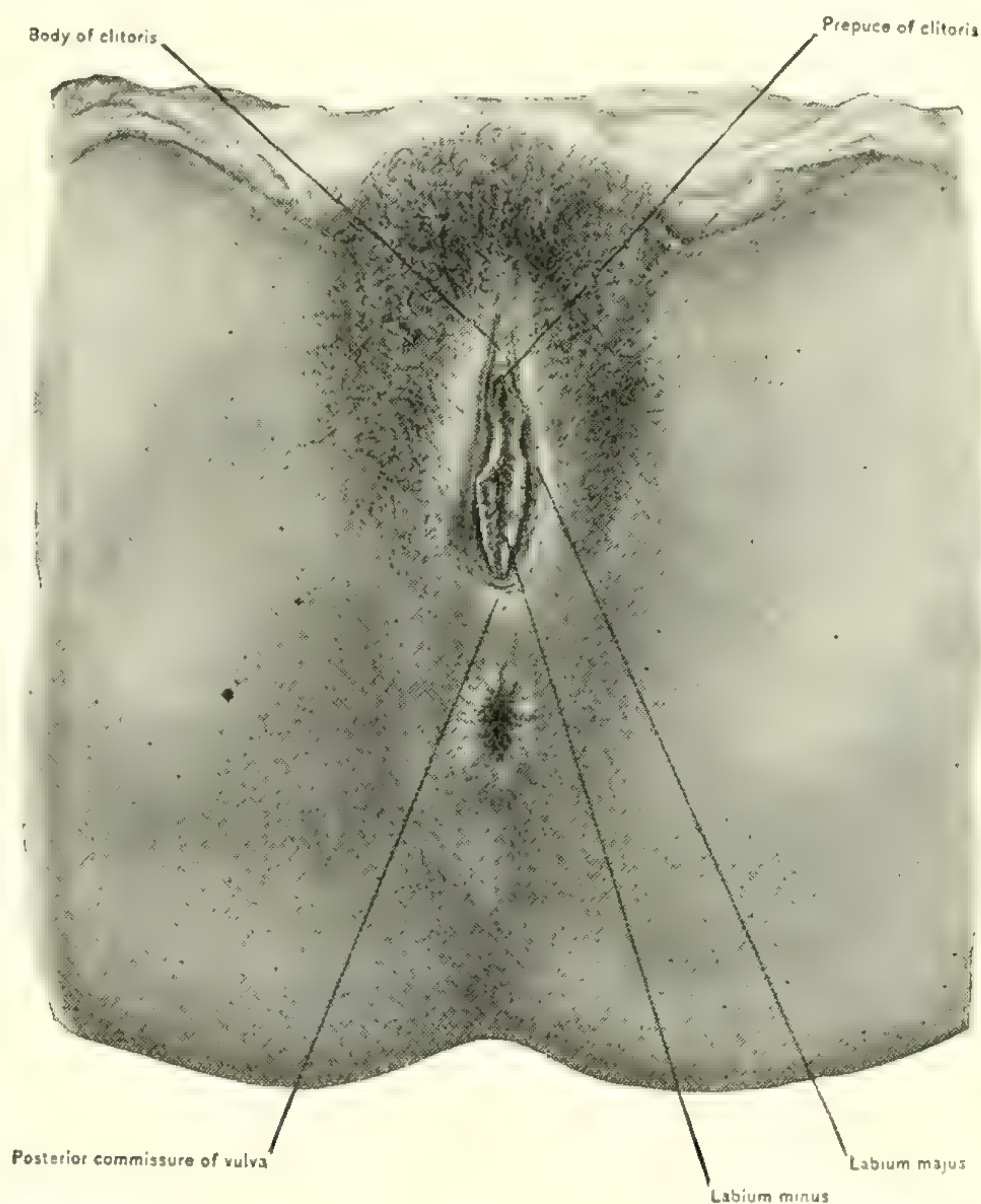


FIG. 283A.—The vulvoanal region. (After Deaver).

\* Kuligowska<sup>1</sup> has compared the lengths in 400 Poles. The average length of the anterior wall was 71 mm., and posterior wall 103 mm.

† Cf. also Brantôme, *Les vies*, etc., I., 251; Frank Harris, II., 409; and P. Couteau [M. Cotelli], who called this faculty "le charme secret de ces personnes dont les faveurs redoublent l'amour de l'heureux amant qui les reçoit" (p. 197).



except under certain circumstances when inflammation is present. During sexual stimulation they serve as outlets for a slippery secretion which bathes the vaginal orifice and surrounding parts preparatory to coitus.

The *perineum* and *anus* are of slight interest for our present purposes. The condition of the former is highly important to the woman herself, since lacerations, occurring at childbirth and not properly sutured are apt to cause great lack of tone and control. The anus lies in a shallow depression and is characterised by folds which radiate from the centre. Its muscular control is of some considerable importance to woman, for by the conscious and deliberate control of its contractions a fuller erotic sensibility can be achieved. For this purpose special exercises have

been devised (cf. Van de Velde\*, Liebenstein, etc.).

[Many observations have been made on the various positions of the vulva.]

Columbato d'Isère, for example, made some deductions from his clinical observations and maintained that in southern climates these organs tended to be set higher in the body and nearer the pubes than in damp and cold regions. Thus, according to this authority the uterus is further down (nearer the introitus) and the vulva further backward in English, Scottish and Dutch women than in Frenchwomen of the south, Spaniards and Italians (Fig. 284). But there is no definite knowledge on this subject, and Buschan is probably justified in suggesting that, if Columbato d'Isère's remarks are correct, the reason is more due to pelvic structure and angle than to climate (Figs. 284-293).

There are certain existent studies of the variations in measurements of the external genitalia in Euro-

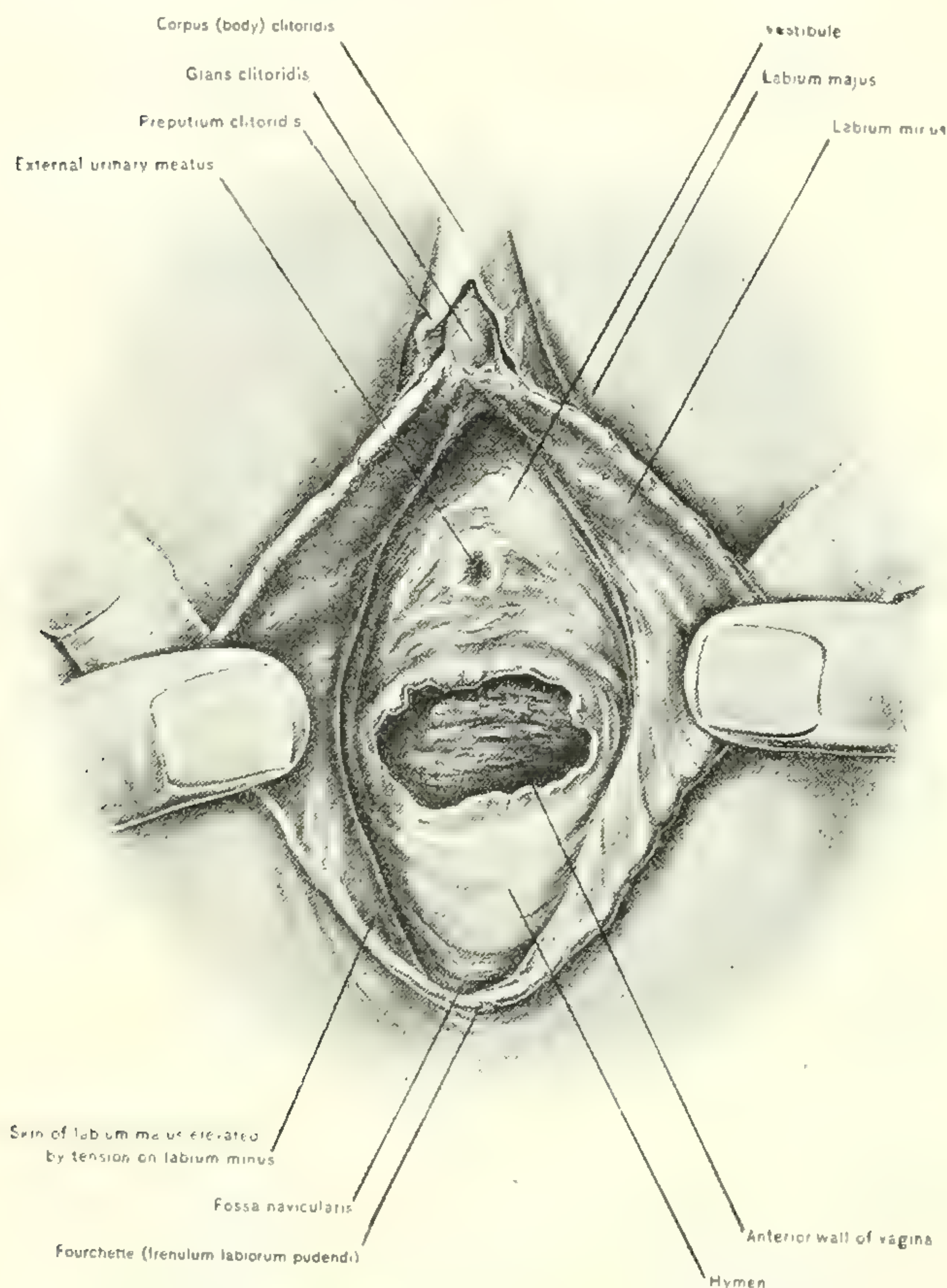


FIG. 283B.—External genitalia of virgin.  
(After Deaver).

pean women. These treatises are of great anthropological value, not only in themselves but as suggesting a standard for comparison with the coloured races. There is a comparison by Götzfried (cf. also Tolberg) based on 111 observed cases of adult women and dealing with the varieties of structure in the hymen. The most frequent shape was found to be *annular* (62 cases = 55.8 per cent.) then *falciform crescentic* (25 cases = 22.5 per cent.), semilunar or crescent-shaped (4 cases—3.6 per cent.), and *labiiform* (7 cases—6.3 per cent.). This last-mentioned structural type is a modification of the crescent with more lateral development and less at front and rear. There were 13 further cases of rarer structures, i.e., 11.7 per cent. There were only 7 cases of a perfectly smooth edge; all the others

\* "Sex Efficiency Through Exercises" by Th. H. Van de Velde (William Heinemann (Medical Books) Ltd., London).



had furrows and serrations which might almost suggest tears, owing to a certain slackness and looseness of the whole membrane (Figs. 54-59).



FIG. 284.—Vulvoanal region (Italian). The nymphæ have been separated. (After Pachinger.)

Kisch follows Maschka in this classification :

- (1) The circular or annular hymen, with round vaginal aperture.



FIG. 285.—Vulvoanal region (Hungarian). (After Pachinger.)

- (2) The semilunar crescentic hymen with triangular aperture.
- (3) The heart-shaped or cordiform.
- (4) The infundibuliform hymen.



And there are other rarer formations, such as the rudimentary, in which there is no perceptible membrane at all: the *imperforate*, in which the aperture is either like a pin's head or quite non-existent (*cf.* Brindeau, McIlroy, Laporte); the sieve-shaped with several very minute apertures; and the bipartus, which divides the orifice of the introitus into two equal or unequal parts by a very narrow bridge of membrane, and which may extend quite deeply into the vaginal passage, also called hymen septus. Finally, there is the loose, folded formation in which several (two to four) layers of membrane overlap one another.

In Kratter's treatise on forensic medicine he distinguishes the usual hymenal structures as:

- (1) Crescentic (hymen semilunaris).
- (2) Annular (hymen annularis).
- And the rarer formations as:
- (3) Fringed or scalloped (hymen fimbriatus).
- (4) Divided (hymen septus).
- (5) Cribriform (hymen cribriformis).
- (6) Infundibuliform (hymen labiiformis).\*

Another detailed study of genital structure of women is by Jayle, who examined 500 individuals and collated his results in a monograph on the anatomy of the labia minora or nymphæ among European women. He found frequent asymmetry and either asymmetrical or bilateral excessive development or hypertrophy, an anomaly to be discussed in the following section. He found that the labia minora might either surround the introitus vagina completely with deep lateral folds or shelve abruptly away towards the rear. He also found cases of supplementary structures such as both Bischoff and Martin found in the natives of Tierra

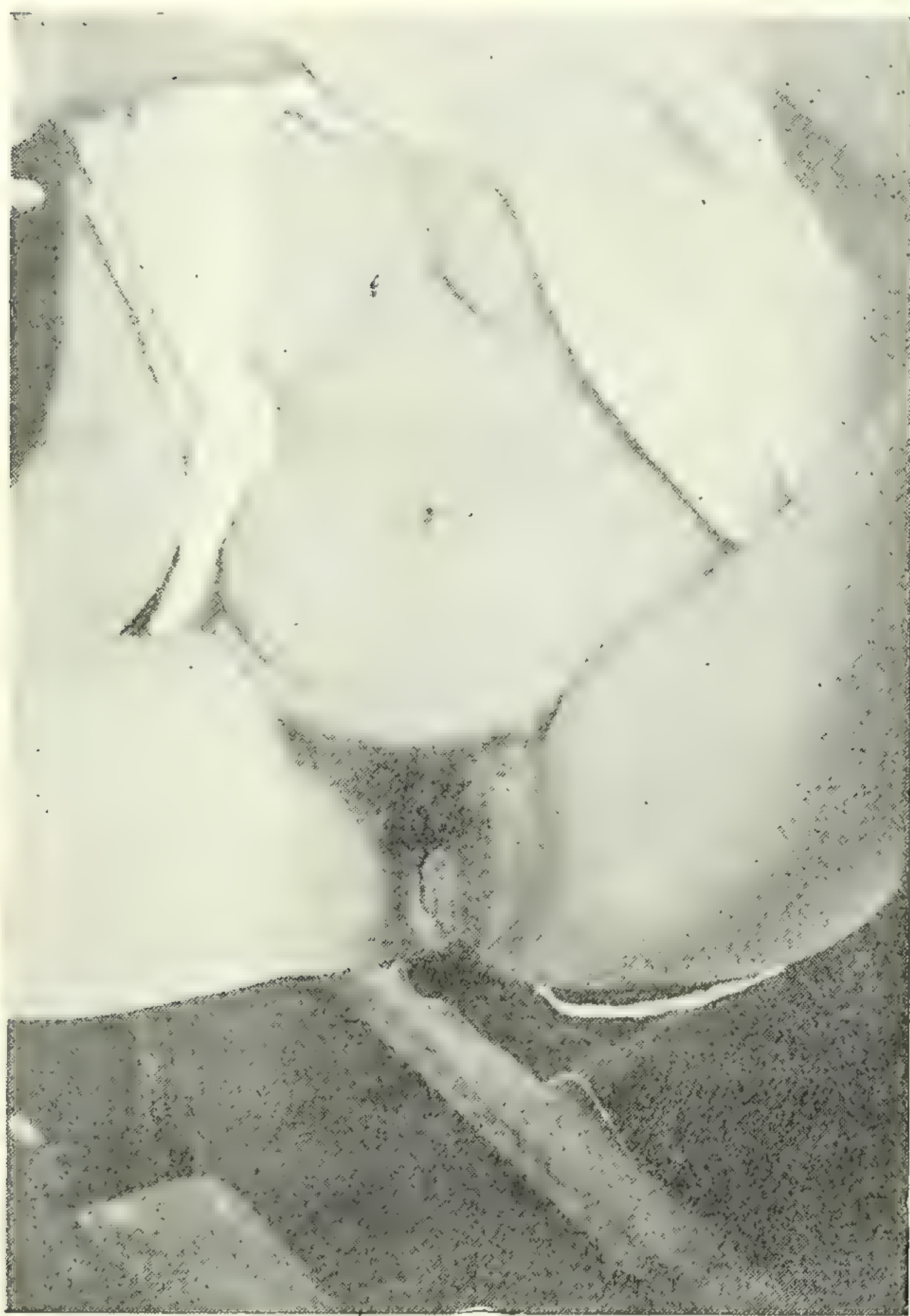


FIG. 286.—Vulva of a girl from Bohemia, 23 years.  
(After Pachinger.)

del Fuego. The extreme edge of the labia minora can divide into two, into the so-called *pli paranympheal*, as Jayle has termed it; and this modification or elaboration may be so pronounced as to merit the title of "*petites lèvres latérales secondaires*," or, if the double fold is only developed behind the introitus in the rear portion towards the anus, then he terms the result: "*formation des petites lèvres postérieures secondaires*."

These investigations and recorded results are valuable anthropologically, but they are, of course, only the beginning of systematic study and are confined to cases taken from the white race. In view of the significance of the female organs juridi-

\* [Tenbaum has also described various forms and Willette has collected material from the older authors.]



cally, anatomically and anthropologically, the small extent of our exact knowledge, absolute and relative, is to be regretted.

We are even very ignorant of conditions among the anthropoid apes in this

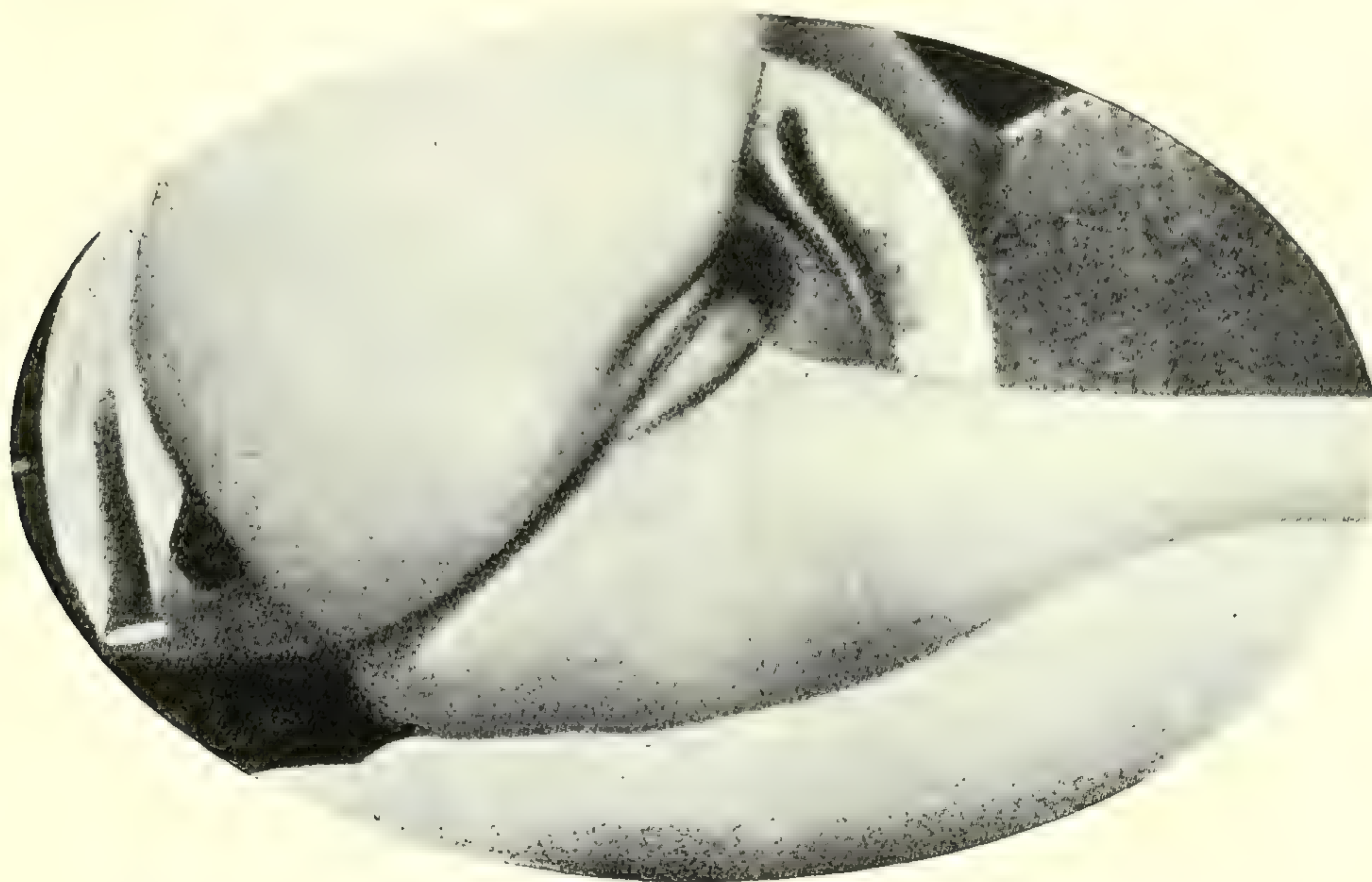


FIG. 287.—Vulval and gluteal region in a Japanese. (After Stratz.)

respect. Gerhardt<sup>1</sup> says that the hymen exists in the gorilla and in certain ungulates but not in most mammalian species. But Klaatsch maintains that the gorilla,

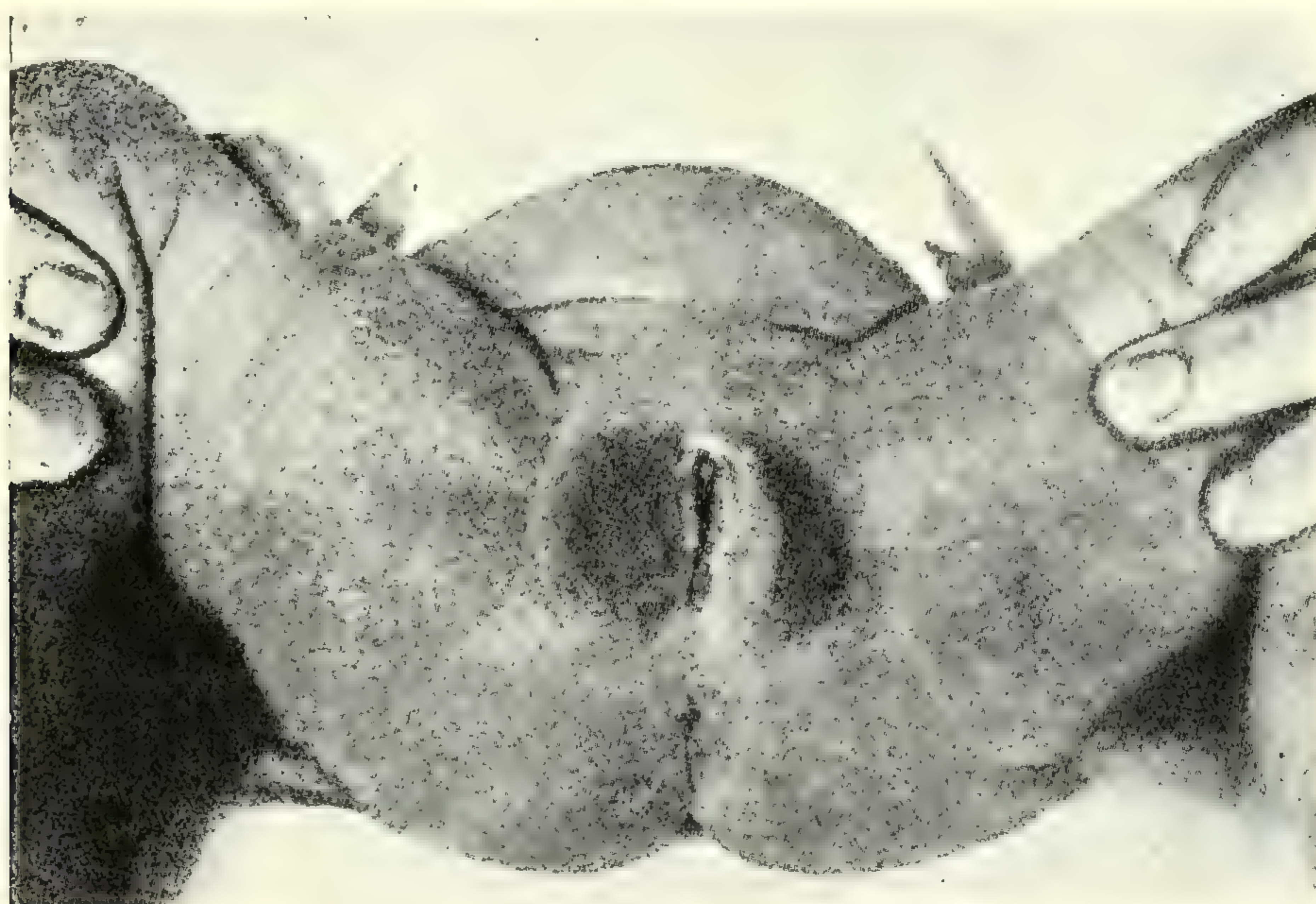


FIG. 288.—Vulvoanal region in a new-born infant. (After Baisch.)

chimpanzee, zebu and gibbons have structures which may be classed under this heading, but that the orang and all other simians and mammals have not. Thus there is direct conflict of statement and this is all the more unsatisfactory because





FIG. 289.—Anterior view of the vulva before puberty. (Photo, R. A. Giesecke.)

organs of the aboriginal Australian women are situated further towards the rear and away from the symphysis pubis than in Europeans; and he adds that coitus *a tergo* is therefore customary among them. But this statement is directly contrary to the accounts furnished by Miklucho Maclay and Walter E. Roth<sup>6</sup>; the latter explicitly describes:

“The peculiar method of copulation in vogue throughout all these tribes does not prevent fertilisation, notwithstanding the mutilation of the male. The female lies on her back on the ground, while the male with open thighs sits on his heels close in front: he now pulls her towards him, and raising her buttocks drags them into the inner aspects of his own thighs, her legs clutching him round the flanks while he arranges with his hands the toilette of her perineum and the insertion of his penis.”

This method can be compared with that practised in the Trobriand Islands which Malinowski<sup>2</sup> has described.

of the specifically human characteristics of the hymen. The form of the vulva differs in different races; so further and more precise knowledge of sub-human species might be very instructive (*cf.* also Neuville).

We may assume as certain the non-existence of actual labia majora in oranges, gorillas and the gibbons, or at least, their very rudimentary size and shape. The interior labia minora are also comparatively slight, but appear larger than in the woman. In the chimpanzee the outer labia are somewhat more conspicuous and swollen during the œstrus which corresponds to the menstrual period in human beings. (Hartmann and U. Gerhardt). Also, the chimpanzee has a prominent clitoris, but nothing corresponding to the mons veneris, or specially thick “pubic” hair (*cf.* v. Bischoff<sup>3</sup>). The chimpanzee appears midway, anatomically, between the woman and the gorilla, oranges and gibbons, which resemble one another more closely.

We shall now collate and summarise what is known or reported on racial differences in the female genitals, with the proviso that many of these statements need corroboration.

According to Köler, the genital



FIG. 290.—Vulva of a Korean. (After Baelz.)



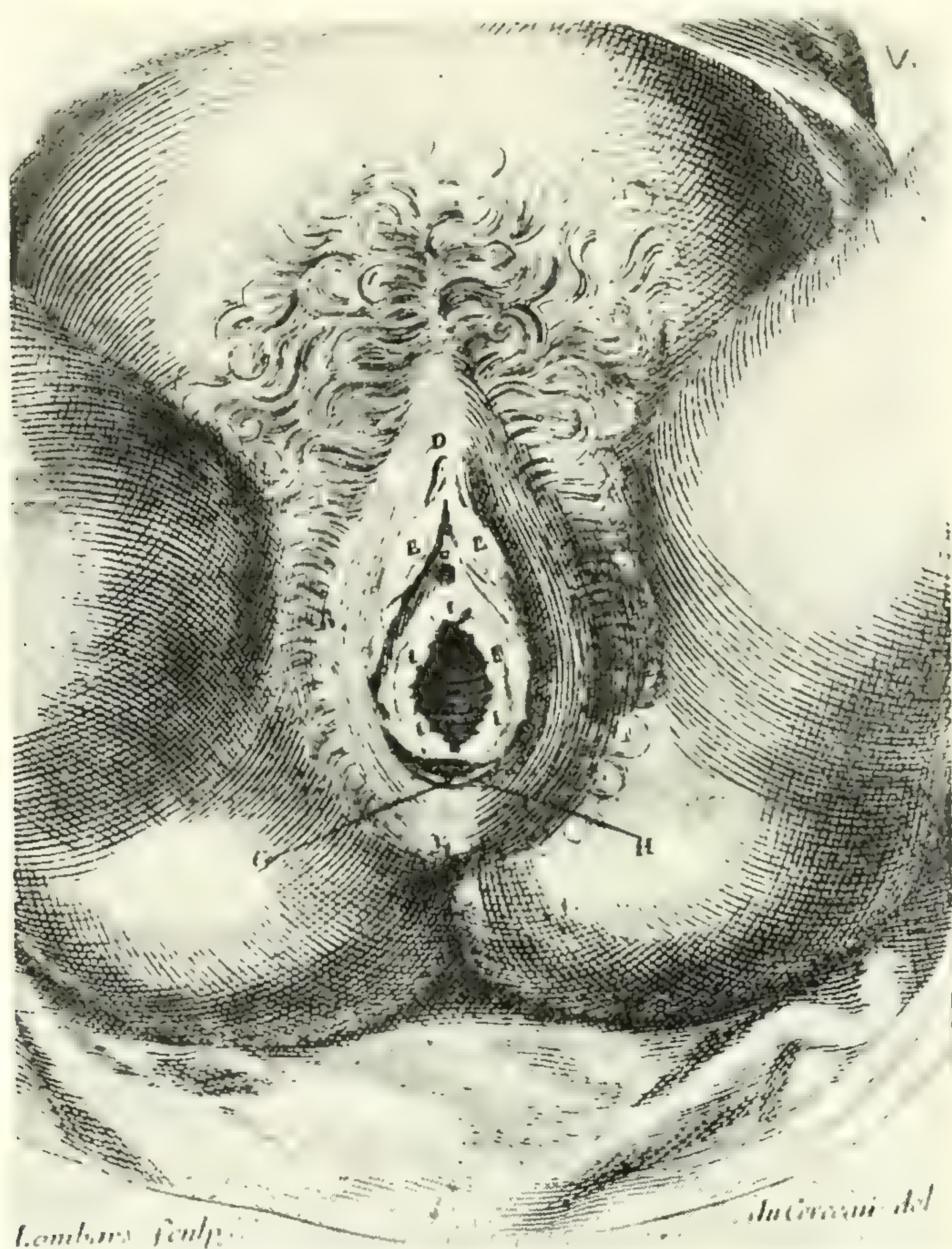


FIG. 291.—The vulvoanal region after a drawing by Lombars. (French, c. 1740.)



FIG. 292.—The vulvoanal region. English, c. 1758. (After Smellie.)

Riedel<sup>1</sup> has given some reports, hitherto uncorroborated, of the peculiarities of the inhabitants in the Molucca Islands. He describes the women of Gorong and



Ceram Laut as having narrow vaginal orifices and with rudimentary inner labia. In the women of the Babar Islands the rima pudendi is reported as apparently shorter than in most of the women of Amboina. The islands Moa, Leti and Lakor are inhabited by two physically distinct stocks, one narrow headed, the other brachycephalic. The women of the former stock have the vulval cleft of oval shape; among the brachycephalic tribes the labia minora are only slightly developed; and the same is the case among the women on Buru, in whom the pudendal cleft is also narrow.

Riedel <sup>5</sup> also describes the genital organs of both sexes among the Aru islanders.

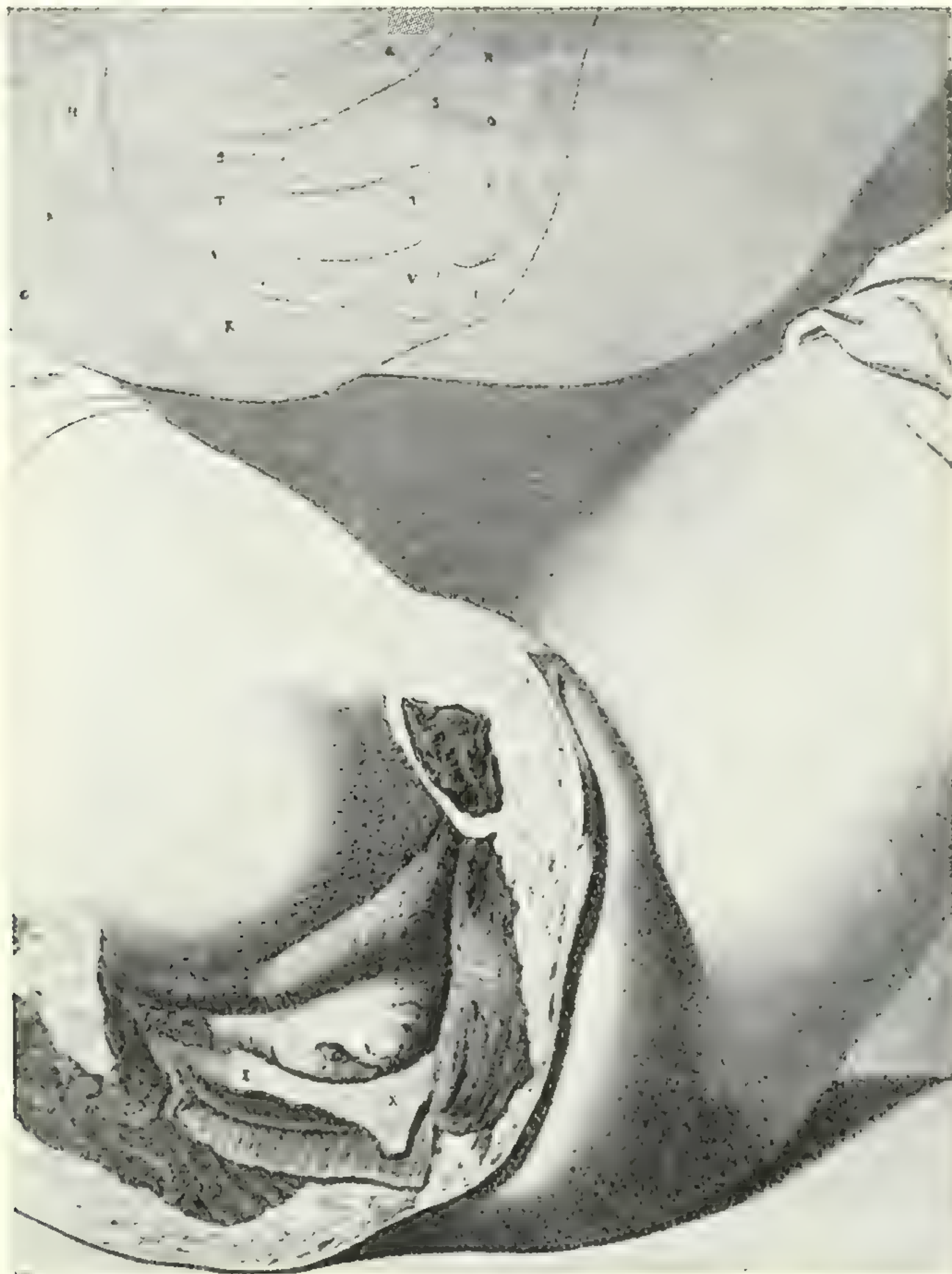


FIG. 293.—Section illustrating the vulvoanal region. (After Smellie, c. 1758.)

He says the vagina is small, as is also the penis in men, and thus the people are mutually proportionate.

The New Caledonian women have a more decided backward slope of the vagina than is usual among Europeans, according to Dr. Jacobus X., and, if the hymen has been preserved, it is generally annular. The same authority gives the following particulars about a native woman of Tahiti: a well-developed clitoris of  $1\frac{1}{2}$  to 2 in. in length. The hymen is only found intact in children. The vagina slopes less backward than among negresses, New Caledonians and Melanesians of the New Hebrides; its position is more that of the European average.

Both Azara and Rengger mention the very large and thick labia of the Guarani women in South America.



The available material about the women of Tierra del Fuego is comparatively detailed. Two Fuegian women who travelled through Europe with their husbands some years ago died, and autopsies were performed on them. The French Ministères de la Marine and de l'Instruction publique sent a joint expedition to Cape Horn, and Hyades and Deniker have made anthropometrical reports about fifteen women of various ages. Moreover, R. Martin thoroughly examined and measured an anatomical specimen of the organs of a woman who died in Zürich. The accounts of post-mortems, plaster casts, anatomical specimens and observations on living women of that race (v. Bischoff,<sup>4</sup> v. Meyer, Hyades, Deniker, Mondière and R. Martin) concur in ascribing the following peculiarities to their genital area, in the words of Martin: "almost total lack of hair, flat labia majora, rudimentary clitoris, medium-sized labia minora, with a few folds and a well marked urethral meatus."

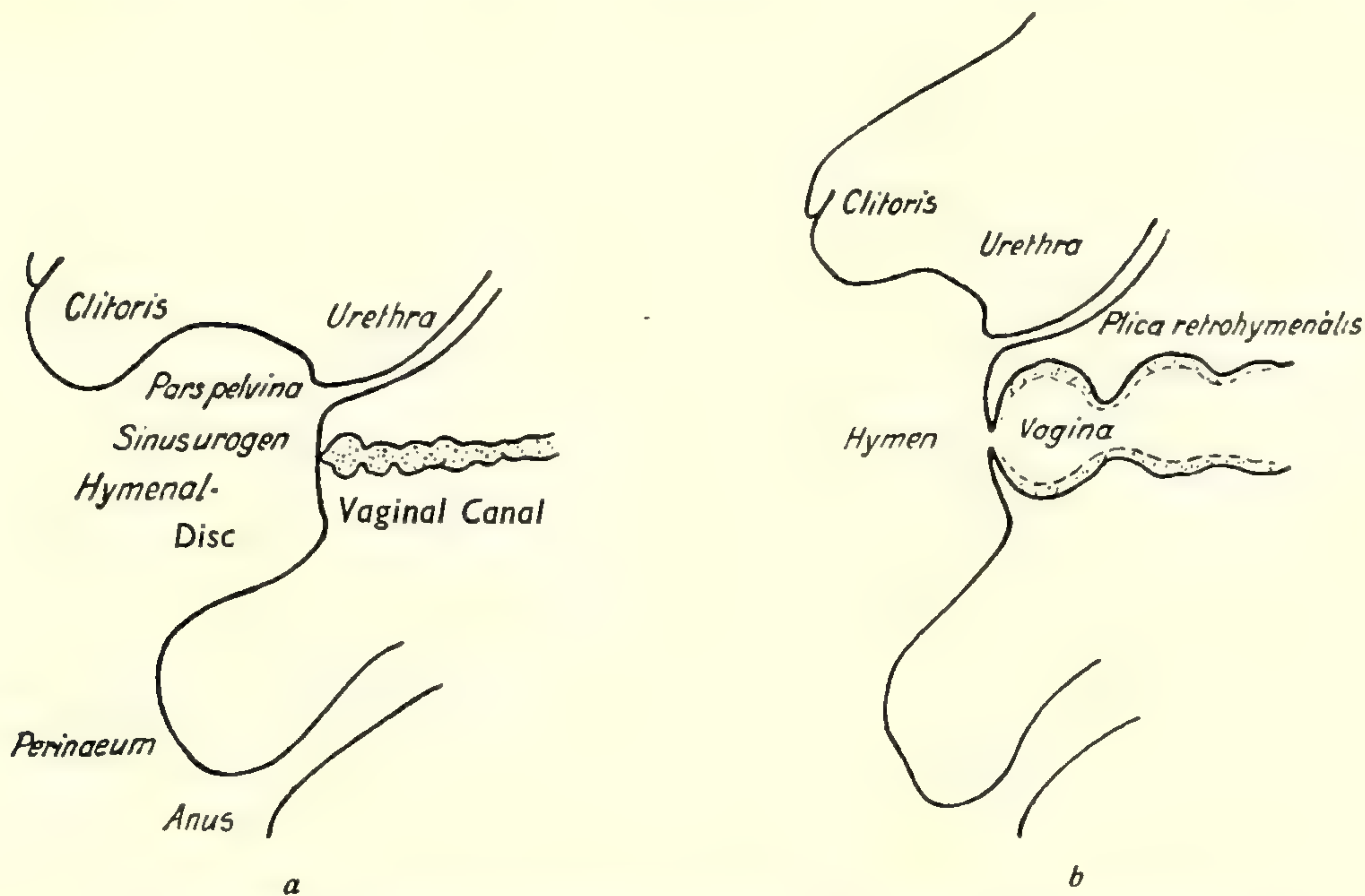


FIG. 294.—Schematic representation of development of hymen.  
(a) Early stage. Müller's tubercle. No hymenal opening. (b) Later stage.

It is significant that v. Bischoff,<sup>4</sup> who independently examined the organs of a Fuegian woman (post-mortem), found both the folds or ridges in the labia minora—on one side at least—and a flap-like appearance of the urinary aperture.

Virey attributes great vaginal capacity to the Kamchadale, as they are accustomed to insert a cylinder of birch bark, but it is not certainly known whether they only do this during the monthly period, as is usual with some women of the Malay Peninsula and Archipelago, or habitually.

Steller also mentions their size in this region, and adds that they "preferred Cossacks and Foreigners to their own countrymen" in consequence.

According to Pallas there is a similar custom among the Ostiak women who "constantly wear a twisted roll of soft schappe silk pushed as far up as possible and frequently changed for the sake of cleanliness. And because this would fall out if it were not kept in place, the Ostiak women have invented a belt almost like the girdle of chastity inaugurated by the jealousy of Southern Europe, in this case, and a bandage passed between the thighs with a special shield of birch bark."



According to E. v. Baelz,<sup>1</sup> the external genitalia of the Japanese women (Fig. 287) are not æsthetically pleasing to European eyes, either in form or colour; and this is specially the case in the aristocratic type. The illustration (Fig. 290) shows clearly the formation frequent among the yellow races, *i.e.*, the slightest possible development of the outer labia and a strong protuberance of the inner. Wernich made the following observations in his work as a gynæcologist at Yeddo: "The labia majora have very little fatty tissue and are very loose and slack even in young persons. The urinary aperture protrudes appreciably, perhaps because of the habit prevalent among the poorer classes of micturition in the standing posture. The vagina is short; Wernich found none over 7 cm. (3 in.) in length. He never saw one case of a hymen. The perineum appeared generally moderate in breadth. During the gynæcological examinations there were many more cases of congestion and turgescence of the portio vaginalis among the Japanese than the European women."

It is stated by Dr. Jacobus X. that in Japanese women the mucosa of vulva and vagina are much lighter in tint than in Chinese and Annamese and of the same reddish-yellow shade as in some Spaniards.

Morache has described the labia majora of Chinese women as "*plus développées*." The medical writer quoted above described the genital colouring of the Cantonese women as brilliantly carmine with a dash of ochre or orange.

There are various descriptions and comparisons between the women of various races of Cochin-China and Europeans. The Moi women are reported to be more developed than the Annamese and darker in colouring, being a reddish black or maroon. In Annamese little girls the vulva appears higher up than in the French, but there seems little difference between the adults of the two nations except that the Annamese vulva and vagina are smaller and shallower. The nymphæ are also small and are concealed by the labia majora, and the clitoris is only slightly developed. After the tenth year of life there was no trace of a hymen, according to Dr. Jacobus X.

Mondière gives further details. He describes the Annamese genital formation as different from the European, less wide and less curved and with a shorter perineum. The region bounded by os pubis, os ischii and os coccygis is more trapezoid in shape. Neither perineum nor vulva is curved. There is a relative flattening of both inner and outer labia; and the vagina appears very short so that the portio and os uteri are much closer to the introitus.

Maurel has the following details as regards the women of Cambodia:

"The labia majora are slight or medium in size and very slightly hairy. The inner lips medium or long and pigmented either evenly or in parts. Moderate clitoris, pink vagina with well marked rugæ."

It has been stated that women of certain Turkish tribes are very narrow vaginally even after they have borne children.

Pechuel Loesche mentions that the existence of the hymen is recognised and valued by the Bafiôte (Bakongo) of Loango on the West Coast of Africa. The membrane is termed "*nkumbi*" or "*chikumbi*," and the same word means a young girl from puberty till marriage.

De Rochebrune has studied another African people: the Wolof.

He describes the genitals of the women as "of moderate development." The outer labia form a fold only a few millimetres in height, the nymphæ are rudimentary, and thus the vulva appears as a flattish surface with two ellipsoid folds as its outer boundaries. These folds extend from the middle of the mons veneris to the anterior part of the perineum and their inner surfaces touch and appear merely as a slight



wavy line, even in women above a certain age. The genital colouring is paler than that of the rest of the body : the inner lips are slate blue in mature women, dark red in girls. The clitoris always projects visibly ; the glans being exposed.

These dimensions and proportions differ much from those normal to European women. The elongated nymphæ so frequently described in other African races are not found among Wolof women ; rather is there the reverse, *i.e.*, some degree of atrophy. De Rochebrune speaks of arrested development and compares the genital proportions—with the exception of the prominent clitoris and width of the pudendal surface—to those of a European girl between 8 and 10 years of age. The perineal measurement is also distinctive : in the European woman the perineum averages 0·012 m.,\* and in the Wolof woman, 0·025 m.

Conradt made medical examinations of certain Adeli hillwomen from the Togo hinterland : in one of 25 years old and two girls of 14 he described the genitals

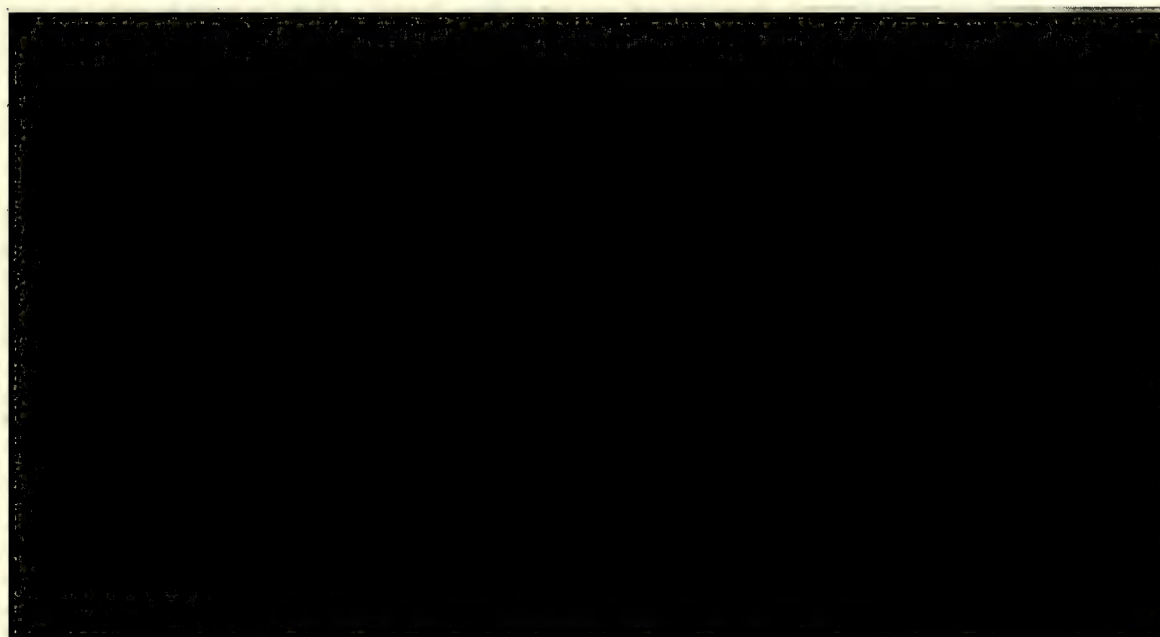


FIG. 295.—Young Hottentot girl. (Photo, Speer.)

as small. And he used the same expression about a woman of the Akapamé people from the same region, she being between 18 and 20 years old. A woman of the same tribe between 20 and 23 years old, was said to have “ normal ” or “ symmetrical ” organs ; terms which are far from conveying a definite impression.

The body of a negress who died in Munich was examined post-mortem by v. Bischoff. She was said to be of Sudanese origin. Her labia majora were strongly developed and her hymenal membrane unmistakable ; the vulva, moreover, was widely open, exposing the everted, pigmented outer labia with their reddish inner surfaces. V. Bischoff adds : “ apart from these modifications—which may occur to an equal degree in Europeans, the genitalia showed no difference from the European racial type ; and the clitoris was certainly no larger.”

The same authority states that the main characteristics of the external genitalia among Bushwomen and Hottentots (Figs. 295 and 296) appeared to be a flatter

\* [This appears to be under estimated.]



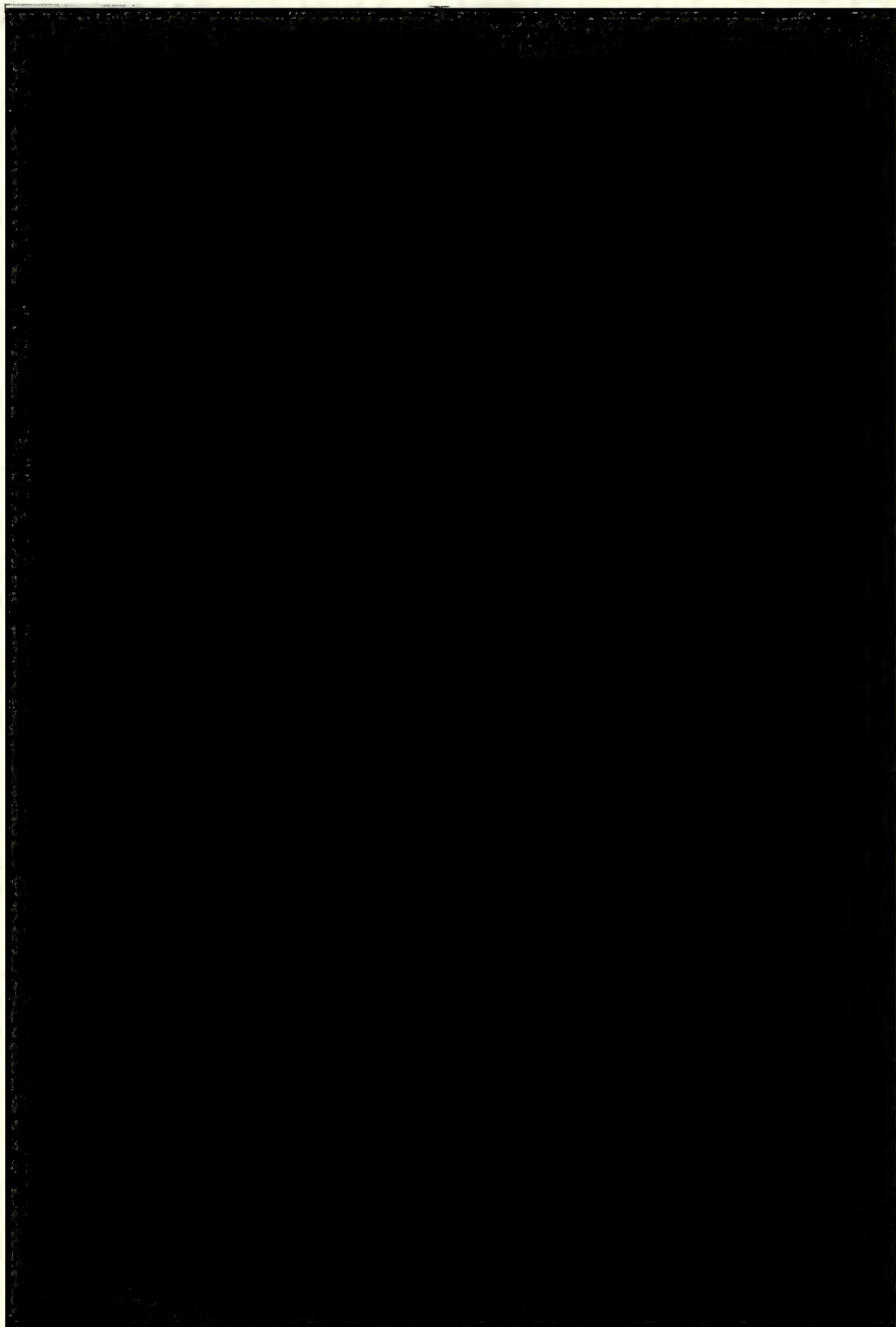


FIG. 296.—Young Hottentot girls. (Photo, Speer.)



mons veneris, slighter labia majora and thinner pubic hair which, however, was never wholly absent.

Bertherand has mentioned that the habits and way of life among Algerians favour "very pronounced genital development," and that the volume of the labia majora explains their excision in some neighbouring tribes. He describes the clitoris as large and prominent, the vagina as very wide.

Before dealing in greater detail with the "Hottentot Apron" we may refer to possible or probable differences in the vaginal flora among different races, a matter on which there is no precise information, although we are already aware that within our own racial and cultural conditions there are great individual differences such as between healthy women and those infected with certain diseases; between healthy women who are and those who are not pregnant; and even in the same woman in the different phases of the menstrual cycle, or in the tranquilly latent or turgescient states.

[The normal vaginal secretion is acid, which Zweifel, in 1908, showed to be due to lactic acid. Glycogen, glucose and a diastatic ferment is also found, but it is the presence of the acid which keeps the vagina relatively immune to harmful bacterial invasion. The germicidal power of the secretion both in non-pregnant and pregnant women is remarkable. Krönig found that a lysol douche materially lessened the power of the vaginal secretion to deal with injurious cultures which had been introduced, a considerable amount of time having to be added to that taken before the douche was interposed.]

Moncelon has furnished almost the only modern statement of this nature and he describes the women of New Caledonia as "extremely disagreeable" to European senses during intercourse in spite of frequent washing.

The ancient literature of Hindustan has been much preoccupied with the differences between the genital organs and erotic functions of women. In the "Kokkōkam" \* (Kama-Shastra) four categories are enumerated: the Padmini or lotus scented, the Chitrini or bright coloured, the Shankhini and the Hastini, the latter being compared respectively to the snail and the elephant. And according to R. Schmidt's study of sex life in Hindustan, the Kāmasūtra of Vātsyāyana divided both sexes into three classes according to their genital proportions.† The women were designated respectively gazelles, mares and elephants; the men hares, bulls and stallions.

An anthropologist with some knowledge of comparative anatomy who reads the highly ornate comparisons and metaphors of these four descriptions with careful attention, will conclude that there has been a good deal of careful observation. We know that among European women there are various well-defined types of genital formation and hair distribution, and we must suppose that the "*lotus scented*," "whose organ is like the blossom of the crimson water lily and even as a holy secret," has full, fleshy outer lips meeting closely over the nymphæ; whereas the second group has much less prominent labia majora and a visible pudendal cleft. In the third group the labia majora are again prominent but thin and approximate to each other; while, in the fourth and last, the median edges of the outer lips do not meet but are normally apart, thus allowing the highly developed, salient clitoris even in a sexually latent and tranquil state to project visibly between them. The peculiarities of these descriptions must not blind us to the importance of their subject, both scientifically and humanly.

\* [Translated from Sanskrit into Tamil by Varakunarāma Paṇṭiyan.]

† [For an account of the social life of the age of Vātsyāyana, see Chakladar.]



There are many similar descriptions in ancient Sanskrit literature. From the "Anāṅgaranga," it appears that clitoris, introitus, vagina and Bartholin's glands were well recognised and classified. [Every part of the genital region was known and developed and a breadth in these parts was much esteemed. Although in ancient India the waist, in order to be beautiful, had to be small, yet the breasts and buttocks had to be round and full to excite admiration. Rāvaṇa tells Sita that her breasts have a fair, firm fullness, for they are bold and swelling with erect nipples like the fruits of the wine-palm. He tells her, moreover, that her thighs are as the trunks of elephants, and that her secret parts are widely open and firmly swell (see J. J. Meyer, II., 432, etc.).]



FIG. 297.—Labium majus, hair, sebaceous glands, sweat glands, etc. (After Winter.)

In conclusion we may mention two anomalies of these organs not infrequent among women of the white race, and often fraught with disastrous consequences. In the first of these deviations from the normal, the vulva is placed farther backward and towards the anus than is usual. The perineum is very narrow in such cases so that in sexual intercourse, if the woman lies on her back, her introitus is directed downwards instead of forwards. This means corresponding adjustments for the male partner who often cannot achieve more than very superficial insertion and causes the woman acute pain by his efforts to penetrate deeply. This pain often

causes complete failure of the sexual relation. The German common people have a curious vernacular expression (*hintervötzig*) for this peculiarity in women, which is frequent enough to be recognised among them. There is, however, a remedy, namely modification of the posture in coitus by means of cushions and pillows placed beneath the woman's pelvis and thighs till the axes of the two organs coincide or are congruent.

The opposite condition is less remediable. If the introitus is unusually far forward, *i.e.*, nearer the symphysis pubis, there is no difficulty in intromission for either partner. But when the culminating spasms of the local muscles begin, the male organ is forced against the rigid pubic bone, and this is so painful for the man that he relinquishes all attempts at union.

It may be added that many of the extraordinary postures and attitudes described by Indian and other erotic writers (*cf.* Forberg) and depicted in Indian art are impossible for average human beings to execute. They have, in many cases, been constructed and imagined on a theoretical basis only.

As is known, the genitals and the nipples are among the most highly pigmented



regions of the human body. Solger considers this the result of natural selection and the extinction of less pigmented individuals because these organs are highly sensitive and important.

[However this may be (and there would appear little to recommend it) the amount of pigmentation varies to a very considerable extent. In European women the blondes show no great pigmentation either with regard to the nipples or genital region. The nymphæ are usually light coloured, and the perineum scarcely darker than the adjacent surfaces. In the brunettes, however, the nipples are often dark with highly pigmented areolæ; the skin around the vulva is also dark, and the nymphæ slate-coloured or brown. The perineum, too, is much darker than the skin of the buttocks, and the anus also deeply pigmented.]

## 7. THE HOTTENTOT APRON

The inner lips or nymphæ in women of the Bushfolk and Hottentots are extremely and conspicuously long and pendant. There has been much description and discussion of this peculiarity, which is known as the *Hottentot Apron*, or in French, the *Tablier*.

The early travellers gave accounts of it. Thus W. ten Rhyne described the protuberant nymphæ as "*dactyliformes*." Blumenbach rejected this statement as an invention, but Lesueur, Sparrmann, Barrow, Péron and others confirmed ten Rhyne's account. It appeared from their testimony that the "apron" consisted in a typical hypertrophy of the inner lips up to 7 in. (18 cm.), and that the prepuce of the clitoris sometimes was involved in this excessive enlargement.

Le Vaillant was the first to propound the theory that the Hottentot Apron was not wholly "natural" in such extreme cases, but partly "acquired" or "artificial"; a view to which we shall refer more fully.

Cuvier described the so-called "Hottentot Venus" and so did Johannes Müller. She was not a genuine Hottentot, but a Bushwoman, whom a Dutchman had brought to Paris with him and who died there in 1816. Cuvier found that the upper portions of the "apron" in her case were hypertrophied parts of both clitoris and inner labia, but the pendant elongated portions were labia alone. And Virey reported on the post-mortem on this woman, "The apron is nothing but the two nymphæ (inner lips) which are elongated and hang down on either side, protruding from the shrivelled and hardly perceptible labia majora. The nymphæ are about 2 in. long and hide the vagina and urethral orifice; they do not disappear into the perineum, but hang freely and can be turned back like ear flaps."

There was also asymmetry. A. de Quatrefages says of the model of the Hottentot Venus in a Paris museum: "The right labium internum is 55 mm. and the left 61 mm. long. The breadth is respectively 34 mm. and 32 mm.; the thickness is equal on both sides, namely, 15 mm."

Similar descriptions have been furnished by Barrow, Damberger and others. Barrow mentions that the hypertrophy increased with age. The greatest elongation he was able to measure was 5 in. But there was a difference from European women in the smoothness of the Hottentot nymphæ: in the white race they are serrated and dentate (Fig. 310).

For some years a Bushwoman named Afandy had allowed herself to be exhibited in Central Europe, and when she died, Luschka made a careful autopsy and anatomical report on her with illustrations. There was complete correspondence with



the cases described by Cuvier and J. Müller as regards the labia majora, which were very short and flat, leaving the nymphæ exposed throughout their entire length. These hung down and touched on their inner surfaces: they were shorter than those described by Cuvier and Barrow, measuring only  $3\frac{1}{2}$  cm., but even so they greatly exceeded the normal dimensions of these parts (Goertz). Another case was subjected to post-mortem examination and dissection by Flower and Murie

in 1864. A Bushwoman, whose age was calculated to be 21 years, had died in London of tuberculosis. Here, too, they found very small labia majora, a clitoris of moderate size, which was only more conspicuous than in the average European because of the defective outer labia. But, although the clitoris was not large, it had a well developed prepuce which continued laterally till it merged into the nymphæ. These were pendant flaps nearly 2 inches in length and very elastic, of so dark a red as to be almost black.

Flower and Murie also cited the report of an anthropologist resident in Cape Colony, concerning the external genitalia of two Hottentots, mother and daughter, the latter 12 years of age. The girl had already the typical gluteal masses of adipose tissue and her nymphæ hung down in flaps  $3\frac{1}{2}$  in. long when she stood upright. The hymen was not intact. The mother was able to fold back her own nymphæ so that they met behind over her buttocks.

In the Berlin Anthropological Society a meeting was addressed by Waldeyer, who also exhibited an anatomical specimen from a Koranna woman. The Koranna live in South-east Africa and are Bechuana (Hottentots), but, according to Fritsch, with a strong infusion of Bushman blood. He reported as follows:

“Well-developed labia majora, the superior commissure is rounded, and there are a few hairs on the inner surface of the labia majora. The inferior commissure is non-existent, as the labia spread widely and merged into the perineum near the anus. Their breadth was 3 cm., in the middle 2 cm., and decreasing to 1 cm. at the rear. The pudendal cleft gaped somewhat throughout the

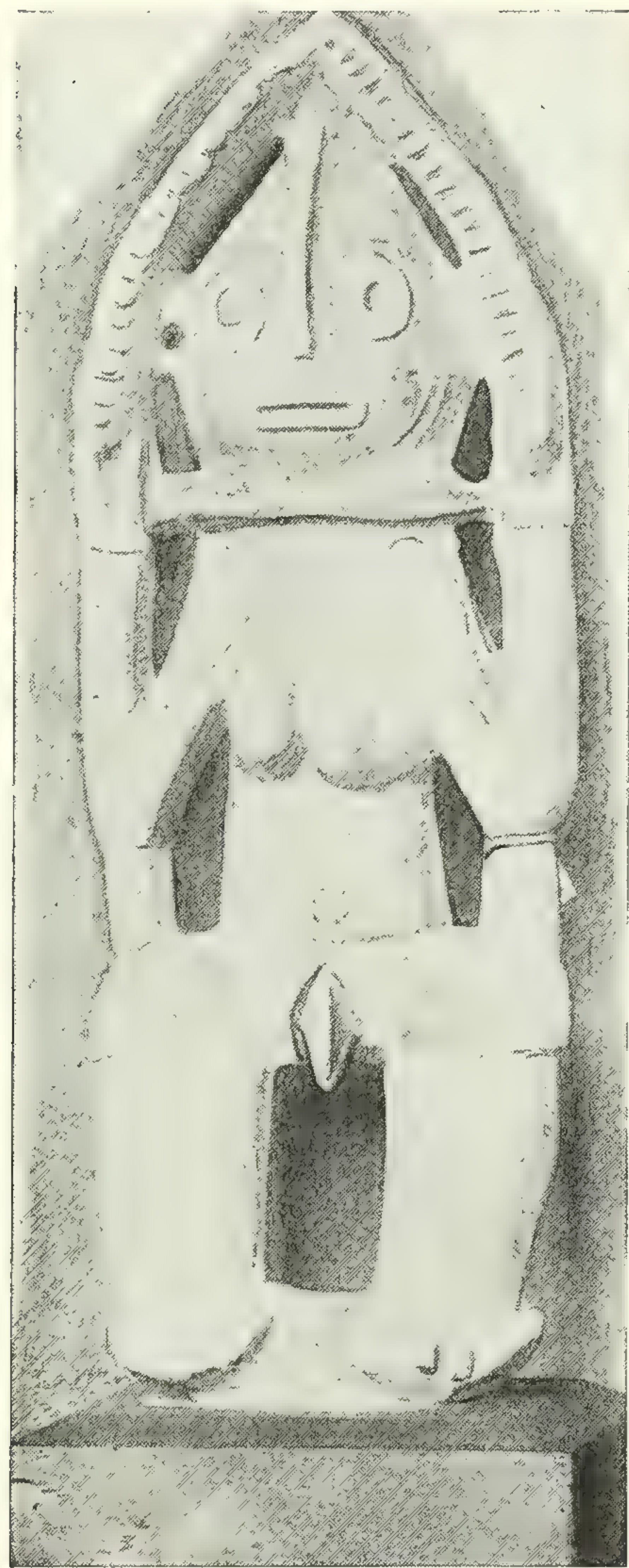


FIG. 298.—Stone figure from the Bismarck Archipelago. (Mus. f. Völkerk., Berlin.)

entire length. This was due to a rounded projection set just under the superior commissure and developing into two rounded lateral flaps, like leaves, that protruded from the middle region of the cleft, hung down and covered the whole rear portion up to the perineum.

“In the present state of the anatomical specimen the rounded portion is not covered by the labia majora, but, if they are pressed together—as would be the case with the thighs closed in a living person—they cover the protuberance, which is, in fact, nothing else than the expanded, solidified and much elongated preputium



clitoridis, with the inner labia as the two flaps. These flaps are 4 cm. long and help to delimit the vestibulum vaginae merging, on their outer surface, into the roots of the labia majora just as in the case of normally proportioned nymphæ. Their width is from 2 to  $2\frac{1}{2}$  cm. They merge into two small folds of membrane, no larger than European nymphæ. At the rear, towards the anus, they are thicker and more prominent. Thus there are three distinct regions in these labia of distinctive and different shape. There is neither navicula nor fossa navicularis, but a furrow running from the vestibulum to the perineum. At the front there is a lateral frenulum on either side of the glans clitoridis. The latter is remarkably small without perceptible roundness and set deep inside the prepuce. The vestibulum is a deep hollow; the urethral meatus well below the clitoris and the carina vaginae clearly visible. The ridges of the posterior vaginal wall protrude in a definite wedge-shaped formation, between the two thick posterior rolls of the nymphæ. The vaginal folds are well marked. The perineum is not quite 2 cm. in length."

Duhousset has described a somewhat similar formation in a girl of 14 encountered at Beyrout, in whom the highly developed inner labia seemed continuations of the prepuce, the body of the clitoris being not perceptible.

The Museum of the Berlin Central Mission has a wooden figure representing a woman and carved in the most northern districts in the Transvaal. Its precise purpose is not certain, but it shows the elongation of the labia in an unmistakable manner.

The Wolof women in Senegal often have an early development of the labia to unusual proportions. The investigator (Jacobus X.) to whom these data are due, suggests that it may be either racial or the result of constant manipulations. And this elongation coincides with marriageable age. Kunike mentions that Weule observed a habit of pulling and fingering the labia minora as part of the ritual ceremonies introducing girls to adult nubility. These manipulations continue daily for a considerable time and the labia were sometimes elongated up to 6 cm.

In the South Sea Islands this anomaly is also not unknown, or so we must conclude from some carvings in wood, such as are made by the natives of New Britain. The illustration (Fig. 298) shows a stone image from the Bismarck Archipelago of very rough workmanship but extremely realistic, within the limits of its craftsmanship. The vulva is widely dilated and the nymphæ protrude with



FIG. 299.—Japanese woman with elongated nymphæ.  
(After Stratz.)



their inner surfaces closed so that they resemble a beak or one solid structure. The whole figure is whitened all over with a chalky substance.

Steller mentions the long and pendant inner labia of the Kamchadale: he says these were characteristic of "some and indeed the greater number of them," and were "transparent like glass or parchment." "They called them *syrætan* and often made merry about them among themselves."

Baelz observed and recorded the slightest possible development of the outer labia in certain types of Japanese women, whereas the long, strongly pigmented nymphæ protruded like flaps (*cf.* Figs. 290–299).

We have enumerated these statements and descriptions as fully and precisely as possible in view of their anatomical and anthropological importance. But they show clearly that there is no unanimity as to the *cause* of the "apron."

Many authors have ascribed this elongation to manual stimulation, pulling, pinching and twisting, which result in thus deforming "normal" nymphæ; in short, a singular kind of acquired malformation.

There are various points to be made in support of this view, for anomalies of the same kind appear sometimes among Europeans. Broca, in controversy with Duhousset, at a meeting of the Paris Anthropological Society stated that he had found such elongations in France on various occasions, and that they were asymmetrical. Robert Hartmann expressed himself in the same sense. He pointed out, however, that there were no reliable particulars of measurements, maxima and minima, available.

Merensky, a Superintendent of Missions, who lived and worked for years among the natives of South Africa, also told the Berlin Anthropological Society that "The Basuto and other African tribes know how to produce artificially enlarged labia minora. The necessary manipulations are performed by the older girls on the younger from their earliest years, as soon as they go together to gather wood or roots, *i.e.*, almost daily. The parts are pulled and twisted and subsequently wrapped round little sticks and twigs." [Hartmann<sup>9</sup> has also reported lengthened nymphæ in the Sudan, and Sarfert states that the labia minora are pulled by the women of Kusæ to make them long.]

Dr. M. Bartels was also inclined to take this view because of the particular portion of the labia minora which protruded the farthest. He took part in the debate after Waldeyer's address and cited Merensky. The same habit of genital manipulation has been recorded among the Bavenda people of the Northern Transvaal border.

He was also emphatically of opinion that Hartmann was right and that the Hottentot apron is not by any means such a rarity even in Central Europe as medical men have thought.\* He maintained, however, that these cases were all in women who were not averse from "masturbatory stimuli." Schröder, the famous Berlin gynaecologist, concurred in this view: in one asymmetrical case under his observation, in a lady in the thirties, one of the nymphæ expanded to thrice its previous size in the course of a year. As he remarks, this is hardly a congenital condition or a racial sign.

[How far hypertrophies about the vulva can be produced by manipulations (for the purpose among others of masturbation) it is hard to say. Few, if any, statistics are available, and the material is mainly anecdotal. Moreover, methods of masturbation vary. In the child, thigh compression is the most common: later, and before puberty, friction of the clitoris is the most usual method. After puberty

\* [Broca<sup>3</sup> saw a French girl with nymphæ 5–6 cm. long, and such are not uncommon.]



pressure on the clitoris and vulva generally is practised, especially if this has been carried out by members of the opposite sex, as is commonly the case. The vulva is



FIG. 300.—Two Bushwomen with elongated labia minora. The younger, aged 14, has had a baby. (Photo, F. Seiner.)

pressed with the hands and the parts are caused to slide forward and backward over the symphysis. When the clitoris and labia become turgid and swollen they are pressed and pulled, and it is here that some authorities aver that hypertrophies result, especially as regards the nymphæ.



Kelly, who had a large gynæcological practice, seems convinced that enlargements of the nymphæ can and do result from this traction. He has described what



FIG. 301.—Two Bushwomen. The one on the observer's right does not appear to have elongated labia minora. (Photo, F. Seiner.)

he calls a "typical case" in his "Medical Gynecology." The patient was a well-developed brunette of 18, a virgin, and of excellent antecedents. The breasts were large with prominent nipples and pigmented primary and secondary areolæ. Thick



hair surrounded the vulva, which was provided with rotund, coarse-skinned outer labia. "Between these outer labia," the account continues, "protrudes, in all postures, a corrugated roll of brown-black skin. Thickened, elongated, curled on themselves, thrown into tiny, close-set, irregular folds that cross at all angles as in a cockscomb, each lesser labium hangs in a double fold, its anterior projection partly concealing the rear portion. Unrolled, this little elephant ear, elastic and insensitive, reaches one inch, or even two, beyond the majora, and then drops back, wrinkling into deep furrows. . . . The prepuce, thickened and lying in rounded folds or wrinkling plaits, is continuous with these lesser labia [*cf.* Fig. 118]. They

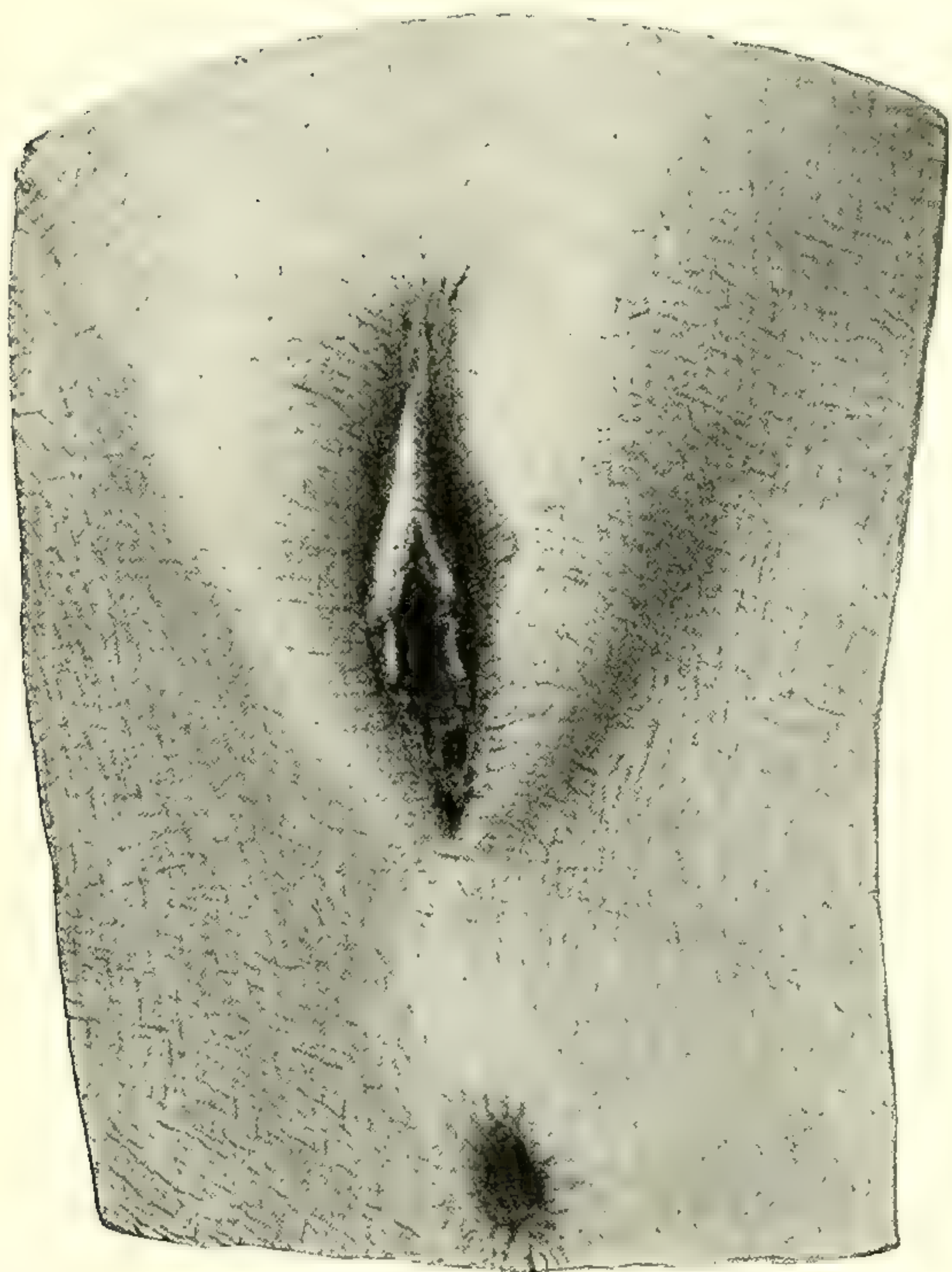


FIG. 302.—External genitalia of a Hottentot girl of 10 years, nearly natural size. From a prepared specimen. (After Bartels and Kaussmann.)

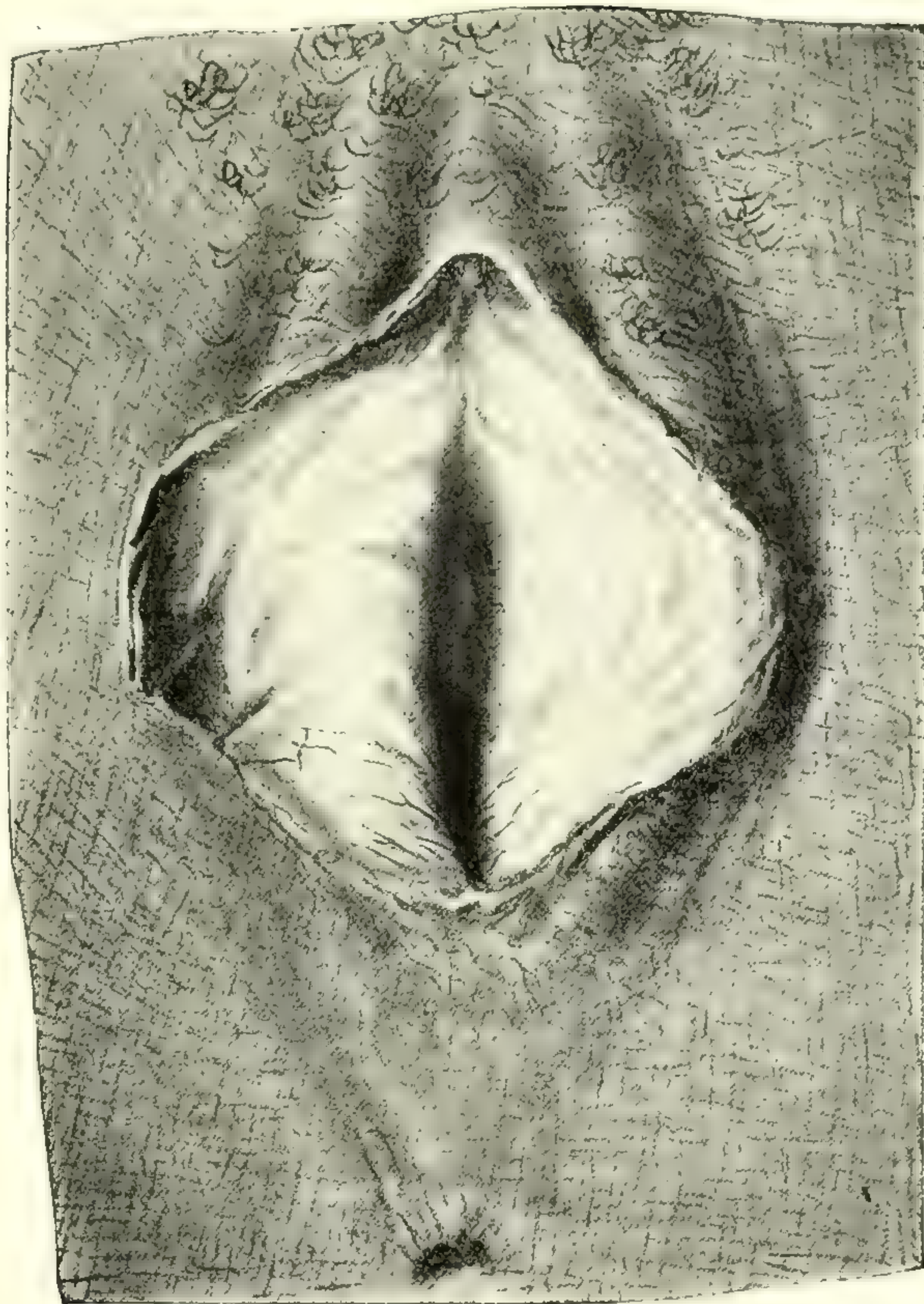


FIG. 303.—Vulva of Hottentot woman of 30-40 years. (After Bartels and Kaussmann.)

unite in a sweep behind the vulva, so that the fourchette and the perineal raphe are as dark and corrugated as they. Laterally, from them, two bridges of the same fine-laid furrowed folds run across the shallow sulcus that lies between inner and outer labium on to the labia majora, like an accessory or intermediate pair of smaller labia; and this duplicature hangs up or puckers the centre of each labium minus. The prepuce is partly adherent, and underneath it smegma lies hidden. The fully developed clitoris rounds its back and projects its tip under this thick cover nearly an inch in advance of the face of the symphysis. On each side a couple of prominent veins twist along the inner aspect of the labia majora. The wide meatus presents two curious ear-like flaps or tabs when drawn open. Into these ridges the forward edges of the hymen run. The openings of the vulvo-vaginal and urethral glands are reddened and gaping. The hymen is too small to admit the finger-tip.



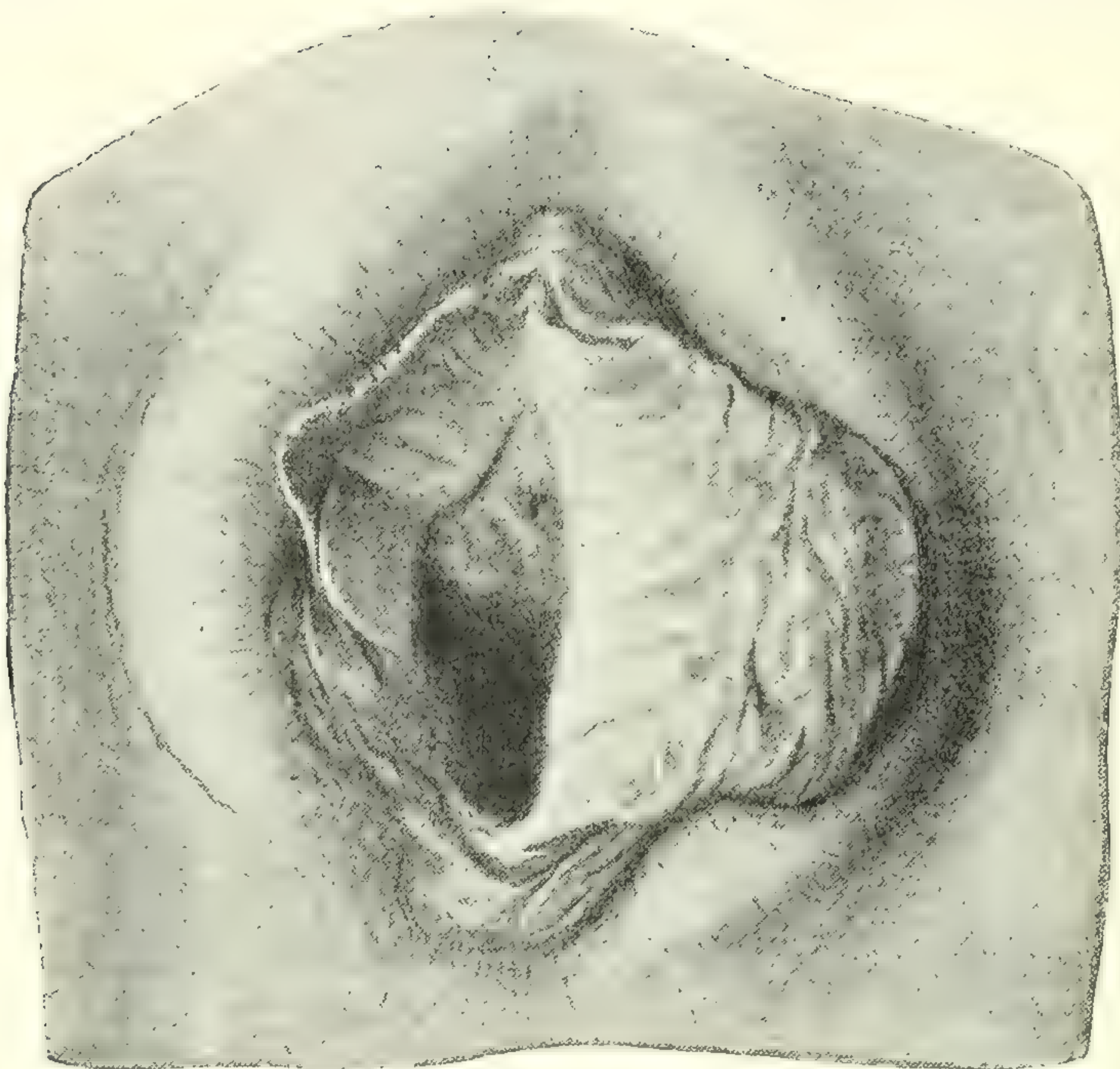


FIG. 304.—Vulva of Hottentot woman of 30–40 years, showing asymmetry. (After Bartels and Kaussmann.)

sionally the orifices may be expanded from 6 to 9 in., yet when released they spring back like closed puckered curtains. (Cf. for further details of hypertrophy in whites, Broca<sup>3</sup> and R. L. Dickinson.)]

In the previous chapter we have referred to Jayle's investigations of 500 European cases. He records among this material "*le plus souvent*" a protrusion of the inner lips beyond the outer, often to considerable degree and either bilateral or asymmetric.

Nevertheless, there is also considerable support for the view of the "apron" as congenital. Lichtenstein, and more especially Vrolik (in a letter to Tiedemann) testified that "in the new-born child there was already the suggestion of this hypertrophy as a congenital idiosyncrasy."

The photographs reproduced here (Figs. 302–305) were sent specially from South-West Africa and come from the bodies of Hottentot women whose ages were not stated. Mr. Franz Seiner kindly also sent some photographs of Bushwomen and girls. It is of some significance that

The deeply pigmented anus with its powerful sphincter is surrounded with small piles, and finally, the pelvic floor muscles are increased in vigor and thickness and in susceptibility to spasm. Vaginismus is not uncommon."

In this account the development of the nymphæ is clearly described. Moreover, Kelly states that the little tabs or flaps seen at the urethral orifice are due to similar causes, an opinion widely held by other observers. The varied assortment of articles (hair-pins, bits of pencil, etc. (cf. Morand)) found in the female bladder are too well known for detailed description. Moreover, the dilatability of hymens is such that it is stated that occa-

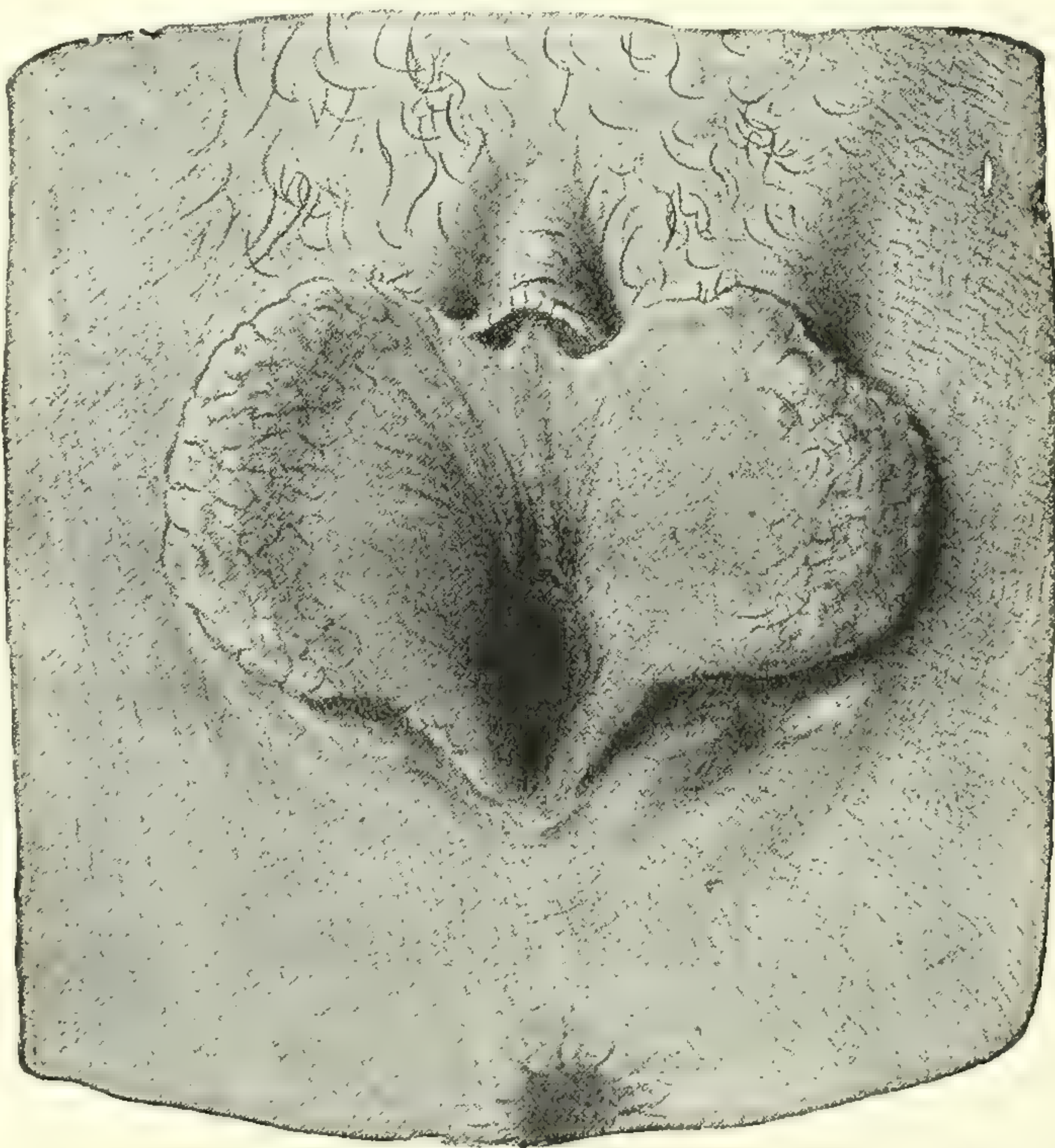


FIG. 305.—Vulva of Hottentot woman of 30–40 years. (After Bartels and Kaussmann.)



there is already a certain hypertrophy in a 10-year-old girl. Dr. Max Bartels is justified in protesting that he cannot believe in a wholly artificial (masturbatory) origin at that early age. Again, the younger girl who looks almost a child, has no visible enlargement of the nymphæ (see Fig. 301)

Max Bartels was further of opinion that artificial enlargements through manipulation never equalled the dimensions of the real "apron," though, of course, it is not disputed that this may owe something to the manipulations of the women. On the whole, the German editors are of the opinion—shared by G. Fritsch<sup>6</sup>—that the Hottentot Apron is really a racial peculiarity. R. Hartmann, who disagrees, admits that we have no full and exact data of measurements, average, minimal and maximal, but it is these measurements which are the crux of the problem.

The question arises as to what could be the significance or purpose of the elongation in the terms of comparative anatomy? Is it an atavism, a symptom of primitive development?

Blanchard has voiced this opinion with emphasis. He places the Bushfolk on the most primitive rung of the whole human ladder. He points out that, while the nymphæ and clitoris are enlarged, the mons veneris and outer labia are subjected to "a veritable regression" which makes them rudimentary in comparison with other races. He declared it impossible to overlook "the remarkable resemblance between the vulva of the female chimpanzee and the local structure of the Bushwoman."

In his investigations, however, U. Gerhardt found a very slight development of the nymphæ in the anthropoid apes, although they were comparatively largest in chimpanzees. E. Fischer<sup>5</sup> declared the same was true of the American spider-monkeys. And, indeed, the matter is far from simple. Not only actual but proportional dimensions must be considered. Not only general impressions, but exact and adequate details.

[From the earliest times this elongation of the labia minora among the natives of South Africa has excited the attention of travellers. In the early drawings (*cf.* Hooton) both the steatopygia and the "apron" are to be seen, and travellers such as Kolbe and Sparrmann have, as we have seen, remarked upon it. Drury, in discussing the vulva of the South African Bushwomen, states that the nymphæ attain the length of  $1\frac{1}{2}$ –2 in., and can be tucked into the vagina. In the Cape women they hang down in front of the vulva like "two flesh finger-like pendants."



FIG. 306.—Hottentot vulva. (Anthrop. Ges., Berlin.)



Occasionally they attain the length of 4 in., and the same elongation is to be found in Bechuanaland and among the Massarua. Drury does not believe that the elongation is due to intentional traction, and Schultze-Jena states that Bush girls, when isolated and brought up among the whites still show the elongation. He adds that the labia majora are as poorly developed as the nymphæ are fully developed. (For further details see R. Pösch, Peringuey, A. M. Wilson and Germann.)]

### 8. CONGENITAL HYPERTROPHY OF THE CLITORIS

Certain anatomists have maintained that the clitoris is larger among tropical races than in temperate and especially in cold climates. There is not sufficient



FIG. 307.—Hottentot Apron. (Anthrop. Ges., Berlin.)

material available for certainty about this view, but the reports of Hyades and Deniker respecting the women of Tierra del Fuego are in its favour. They found the clitoris "very rudimentary" in 15 of the cases they examined. But Mungo Park found persistent elongation of the clitoris in the Ibo and Mandingo tribes of Northern Africa; and, according to Jacobs,<sup>1</sup> the clitoris is very often highly developed in the women of Bali.

A negress, who was an inmate of Breslau Hospital, died there, and an autopsy was performed by Morgenstern. Otto describes the result and the curious conformation of the genitals.



“ A thick flap drops before the vulva like a miniature curtain. There is nothing remarkable about the outer labia except that frontally they are somewhat far apart.



FIG. 308.—Klip River “ Kaffir.” (After Speer.)

The nymphæ are much corrugated in places and reach backwards almost to the anus. The frontal flap is 4 in. long,  $1\frac{1}{2}$  in. wide and attached to a stem  $\frac{1}{2}$  in. long.”

Johannes Müller was probably right in terming this remarkable anomaly a hypertrophied clitoris.

Bruce of Kinnaird has some details about the women of Abyssinia. He declares



that their clitoris projects so far and is of such unusual size as to cause repugnance and discomfort, and even to militate against the purpose of marriage. And he suggests this racial anomaly as some explanation of the custom of clitoridal castration which prevails in those regions. Görtz comments on this in a doubtful sense,



FIG. 309.—Klip River "Kaffir." (After Speer.)

for he points out that the Kamchadale girls, though equally hypertrophied in the labia, and also the Bushwomen and Hottentots, are not subjected to this excision. But in making his objection, he obviously confuses clitoridal castration with excision of the labia ; and these are two perfectly distinct operations or mutilations.

The young Wolof woman is also credited with a large clitoris which also grows appreciably after puberty, according to Jacobus X.

The African races are themselves quite aware of their clitoridal hypertrophy



and represent it in many native works of art : for example, in the wooden figure of a woman, from the sources of the Nile (Bongo) which Schweinfurth<sup>2</sup> reproduced (Fig. 311). The little statuette commemorates one who has died. Her clitoris projects in a manner which cannot be overlooked.

But among women of one and the same racial stock at least in Europe, the clitoris has great individual variation. In any large group of women there is

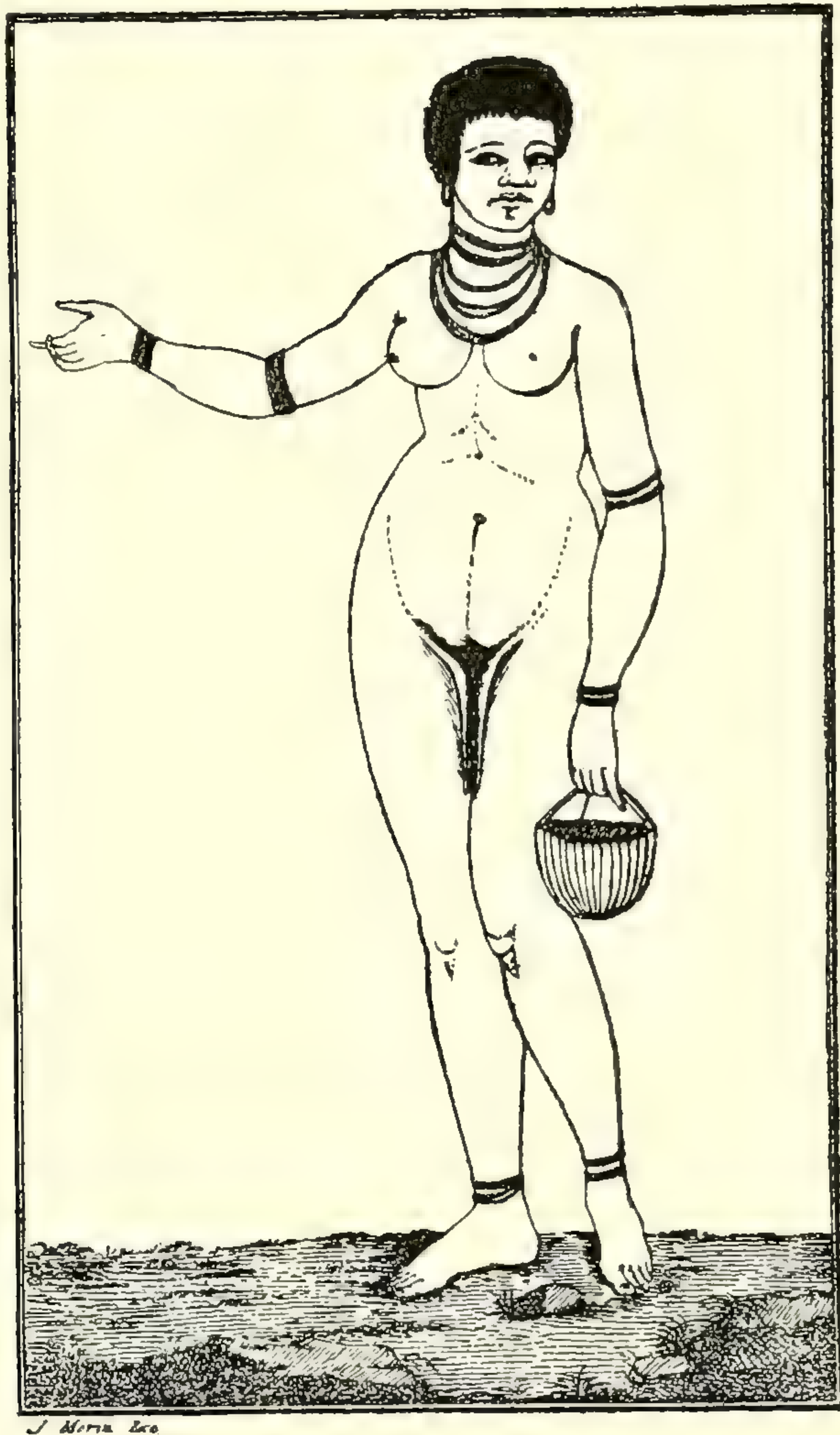


FIG. 310.—“Hottentot Venus.” (From an eighteenth-century drawing.)



FIG. 311.—Female figurine.  
Source of the Nile.  
(After Schweinfurth.)

always a certain minority with much larger clitorides than the rest. This may, in certain circumstances, give occasion to abnormal sexual practices, to which we shall refer later. Parent-Duchâtelet, according to Lombroso, observed only 3 such cases among 3000 prostitutes whom he inspected. Lombroso himself recorded 6 cases. According to Lombroso, Ricciardi found clitoridal hypertrophy in 6.6 per cent. of his cases and Gurrieri as many as 13 per cent. among his.

## 9. ARTIFICIAL ENLARGEMENT OF LABIA AND CLITORIS

In dealing with congenital hypertrophy we have mentioned that the labia minora are sometimes specially manipulated in order to elongate them.



The exact purpose is not always the same. Some are admittedly a form of auto-erotism or sexual gratification by self-excitement. Others again, may be masturbatory but through another person, as in the behaviour of the elder Basuto and Bush girls to their juniors, as has been alluded to above. It is certainly hardly likely to be merely a conventional game. And in yet another category of cases there is no need to suspect masturbation: it is rather a form of "beauty culture," an attempt to meet the racial æsthetic standards by increasing a peculiarity which is considered attractive. Or, again, there may be the deliberate intention of heightening sexual stimulus in coition.

Le Vaillant has observed that Hottentot and Namaqua women, or at least some among them, pull and stretch their inner labia or attach small weights (?) to them to make them longer from motives of vanity. Adams made the same remark as regards the women of Dahomey and Uganda, and Corre has also discussed the matter. It has been stated that the women of Wahia on Lake Nyassa "know how to elongate the clitoris to the size of a finger"!

Among certain American Indians there would seem to be similar habits. The Mandan women are said to "deform their genitals artificially," and among the Hidatsa and Crows, both inner and outer labia are elongated in accordance with custom, according to Prince M. zu Wied.

Finsch gives an account of the elaborate sexual practices and preliminaries of the natives of Ponapé, one of the Caroline Group.

"Very long and pendulous labia minora are considered particularly attractive in women. They are deliberately produced and cultivated from early childhood by manipulations performed by elderly men who have become impotent. These manipulations are continued till the approach of puberty. At the same time and as part of the same training, the clitoris is not only subjected to prolonged friction, but also to suction, and a certain large kind of ant (native to the islands) is applied to this region in order that its sting may produce a brief but acute and not unpleasant stimulation.

"The cult of sexual pleasure is correspondingly ingenious. In order to rouse their mates to the highest pitch of excitement, the men use not only their tongues but their teeth as well."

Kubary testifies to the same custom on Sonsol, another of the Caroline Group. He found the labia minora in mature women "much stretched, owing to the habit of genital suction, which, so far as I know, prevails on every one of the Pacific Islands which I have visited." Moreover, Gudgeon mentions elongation of the clitoris on the Cook Islands.

## 10. THE INTENTIONAL DESTRUCTION OF THE HYMEN

Many of the customs already described appear strange to European traditions, and we find yet another, the intentional and deliberate destruction of the hymen. This is practised by peoples on different cultural levels, some relatively civilised and highly evolved. Most nations attach very high value to the hymen, especially in some oriental countries. But, in many parts of India and most of China, it is completely obliterated and removed in the earliest years amongst girls.

Thus even Chinese medical practitioners are unacquainted with its existence. According to Hureau de Villeneuve, the Chinese nurses wash and cleanse the private parts of the children they tend with such thoroughness that they always insert their finger into the introitus and thus gradually stretch the hymen till it wholly disappears, for in those climates cleanliness is necessary to remove the deposit of



matter which is constantly accumulating. M. Bartels examined a half-grown European girl, born and brought up in China, and found no trace of any hymen.

[How far these statements can be substantiated is uncertain. Professor H. A. Giles,<sup>2</sup> who spent over 20 years in China, is of the opinion that there is little truth in the belief that the hymen (*ch'u nū mo*) is destroyed in China, and points out that in many parts of that country the young bride is given a piece of cloth on which to receive the blood shed at the first coitus. Moreover, in the "Hsi Yüan Lu," or "Instructions to Coroners" (c. 1250) are notes relating to the examination of virgins. To test virginity the finger is to be put within a piece of cloth and then inserted into the vagina. Should the cloth show signs of blood when withdrawn virginity is indicated.

It must be remembered that many fantastic beliefs about China and the Chinese are due to missionary propaganda.]

In British India and the Dutch Indies the *ayahs*, it is said, wash the children as vigorously as the Chinese *amahs* and with the same results.

The same customs prevail in the Moluccan Archipelago and the Amboina Group, probably mainly for reasons of cleanliness.

In Brazil, among the Machacari, the mothers dilate the vaginae of the little girls by introducing large folded leaves and then washing them with tepid water, according to v. Feldner's report. Here the original purpose is probably preparation for future sex relationships.

Mantegazza sent Ploss a written account of methods in Paraguay. When the midwives receive boy babies on their birth they proceed to pull and stretch the male member with their fingers; and, indeed, according to report, the natives of Paraguay are very long in this part. But when the midwives deliver girl babies, they at once push their finger up the vaginal passage, saying, "This is a woman." Thus there are no maidens in the anatomical sense of the word in Paraguay, as the hymen is ruptured by these manipulations.

Riedel<sup>1</sup> gives a description of further Malayan and Indonesian customs, such as the insertion of a roll of vegetable fibre like a cylinder in form, during menstruation, for cleanliness and convenience. And the procedure on the Sunda Islands of the Malay Archipelago is more direct and deliberate. On the first occurrence of menstruation, states Riedel,<sup>1</sup> a koli leaf, folded together, is pushed into the passage and acts as a dilator. This recalls the custom of the Brazilian Machacari.

Both Virey and Steller state that the Kamchadale used vaginal tampons of grass or vegetable fibres at the period and wove special bandages to keep them in place. As for their hymenal membrane, that was not in existence after early childhood. It was considered humiliating and ridiculous to enter marriage as a virgin, so the mothers removed the hymen in the little girls by digital dilation and manipulation, and "taught them their business betimes," in Steller's phrase.

## 11. THE CIRCUMCISION OF GIRLS

Many races have a form of circumcision which is applied to women analogous to the preputial circumcision of men. This was at one time considered a specifically African custom, but we have learnt since then that there are similar practices in Kamchatka, in Indonesia, and among certain South American tribes in Peru. We must regard any imitation here as impossible for geographical reasons



and because of ethnical differences. Rather have we a further proof of the resemblances in the mental processes of primitive peoples throughout the world.\*

Female circumcision† is generally termed excision. It consists in the shearing of the inner lips and a portion of the clitoris with knives of metal or stone. There are, however, great differences of procedure in different races; sometimes both labia and clitoris are mutilated, sometimes only the labia, sometimes only the prepuce. Variations of excision are practised in Egypt (Sonnini, etc.), Nubia (Kordofan), Abyssinia (see Abyssiniennes), in Sennar and its environs, in the Sudan (Sarrazin) and among many tribes, such as the Galla, Agau and Gongga. Excision

is also said to be customary in the smaller oases of the Libyan Desert, and among Arabs (*cf.* El Tebib) the exclamation: "Oh, Son of an uncircumcised woman!" is one of the deepest affronts in their huge vocabulary of insult, according to Wilken.

Fig. 312 shows a specimen in the Berlin College of Anatomy which it owes to G. Fritsch. This specimen consists of the outer genitalia of a "circumcised" woman, a negress who had been a slave in Alexandria; glans and prepuce have been removed, and, it appears, part of the inner labium on the right side. But the mutilation is comparatively much less than in other examples.

Billharz presented Ecker<sup>2</sup> with a specimen of the organs of a lower-class woman where the glans and prepuce of the clitoris and the labia minora had all been entirely ablated. The bulbi vestibuli were lacking and also the corpora cavernosa of the clitoris—which seemed embedded in hard scars of connective tissue. Ecker concludes that when the mutilation was performed the glans and prepuce were caught, drawn outward and forward and chopped off near the root.

Excision is not confined to Mohammedan East Africa. In Central Africa it is practised among the Wasambara (Eichhorn) and Mahenge

district (Hodgson); in the West (*cf.* Daniell<sup>1</sup>) among the negroes of Benin, Sierra Leone (Thomas), Accra and the Congo (Torday); among the Fulah, Susu (Godel), and Mandingo; in Bambuk, Old Calabar (Hewan; Malcolm) and Loanda; and in the South-east, among the Wa-Kuafi and Masai, as well as some Bechuana tribes of the south. We have mentioned the Malays of the Archipelago and the Kamchadale. And, finally, the custom has also been found among the South American Indians of Peru: the Omagua (*cf.* Tessmann), the Campa, and the Pano, and among those living on the Ucayali River.

Attempts have been made to attribute excision to the inventive powers, dogma and ritual of Islam, but Strabo mentions the excision of girls in Arabia centuries

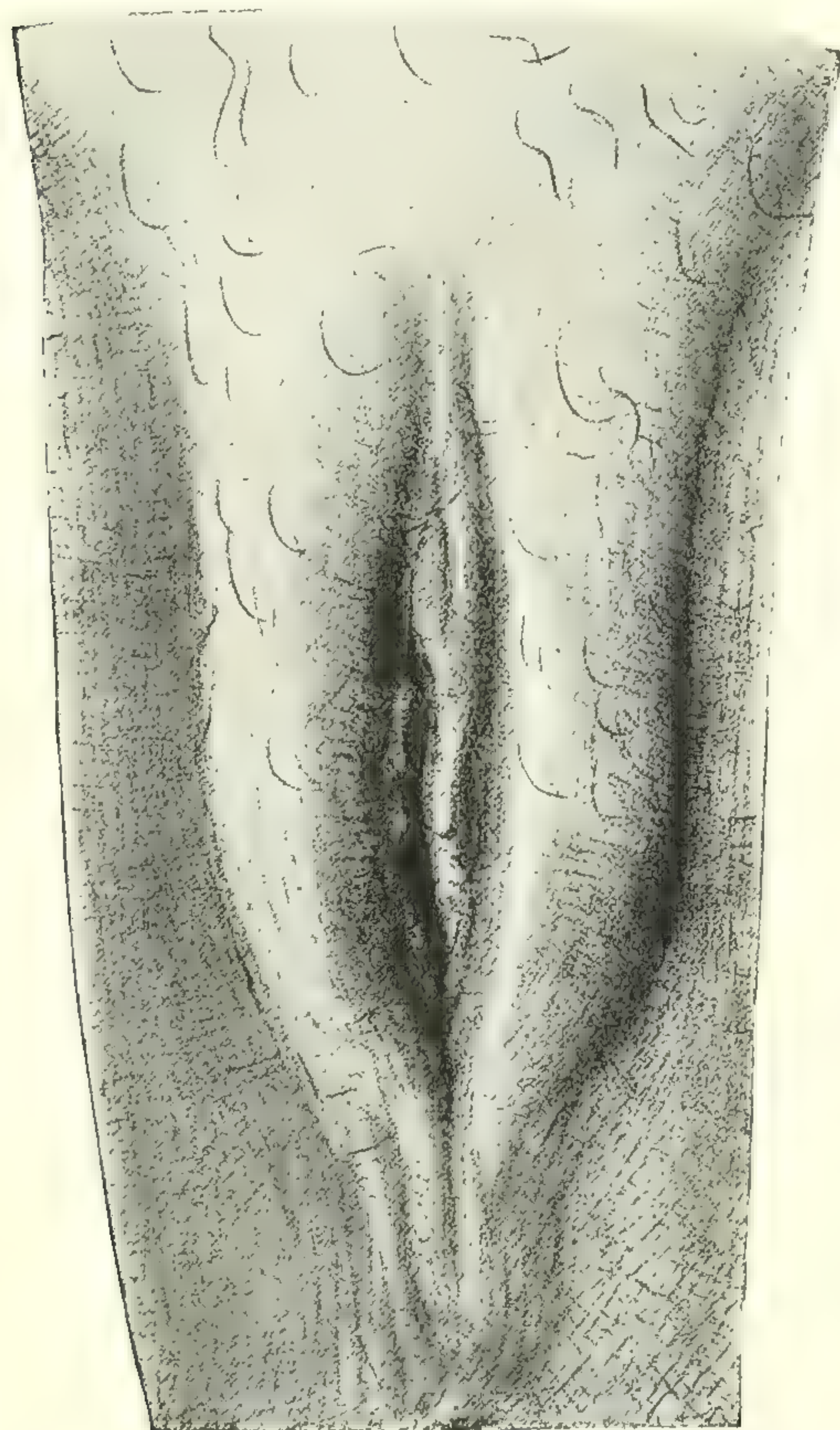


FIG. 312.—Genitalia of a "circumcised" woman. (After Fritsch, Berl. Anat. Mus., 1894, 168.)

\* [This view is not held by anthropologists of the diffusionist school.]

† See Bryk.



before Mohammed. In one of the Greek Papyri in the British Museum (Forshall, XV.: Peyron: Greek Papyri Cat., I., Papyrus XXIV., 31) occurs a passage of some interest. The date of the document is attributed to about 163 B.C. It is concerned with the Serapeum and its recluses. Dionysius, strategus of Memphis, has a petition addressed to him by Harmais, a recluse and mendicant. It is said that there was a girl, Tathemis, also connected with the Serapeum, who earned money by begging. From this money she had saved 1300 drachms which she gave into the charge of Harmais. Her mother, however, named Nephoris, represented to Harmais that her daughter had now reached an age at which circumcision was usual and that as she was now entering womanhood she ought to be provided with dress and dowry. Accordingly she persuaded Harmais to hand over the money and trouble is caused when Tathemis discovers what has happened and demands the return of her money.

This passage is of interest for it suggests that, though male circumcision was reserved for the priestly and military castes in Egypt, excision was practised on all women when they were of age to receive their dowries. Herodotus informs us that no woman held any priestly office in Egypt, so we must conclude that excision or female circumcision, was either practised on all girls at puberty, or was a privilege of those who were reared on the sacred precincts of the Temple of Serapis.

Early medical writers mention this Egyptian custom, among others, Paulus of Ægina, who lived in the seventh century. He describes (VI., 70) the excision of the clitoris or nymphæ when they are hypertrophied, and when the erection of the clitoris becomes objectionable. Barbes is of the same opinion.

Brehm, in discussion with Ploss, expressed the view that excision was intended to set bounds to the extremely active sexual impulse of the women of African race. Other authorities hold that the purpose was mainly *æsthetic* because, as already indicated, the labia minora and clitoris are apt to attain unpleasing and inconvenient proportions.

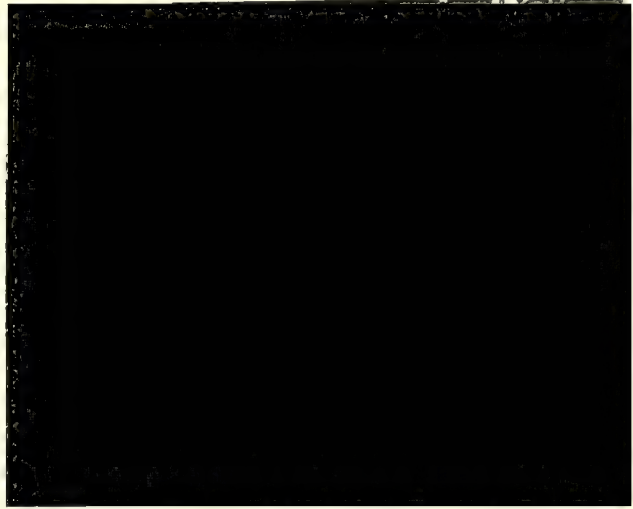


FIG. 312A.—Kenya girls about to be excised. Fort Hall, Izeri Areas. (Photo., A. Brown.)

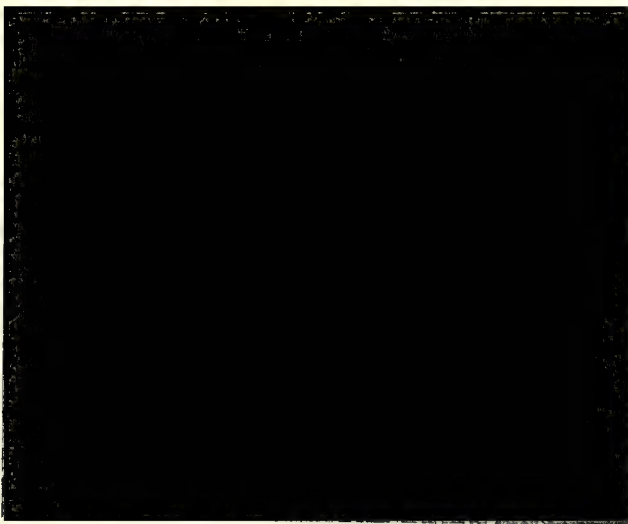


FIG. 312B.—The interlocked position for the operation of excision. Fort Hall, Izeri Areas, Kenya. (Photo., A. Brown.)





FIG. 312C.—The operation of excision in progress.  
Fort Hall, Izeri Areas, Kenya. (Photo., A.  
Brown.)

would not marry and fewer children were begotten, or they married “heretics” and unbelievers who had been excised, rather than good Catholic Copts, and lost their faith. So the College of Cardinals *de propaganda fide* in Rome sent skilled surgeons to enquire into and report on the matter. On their return the surgeons declared that either climatic or other causes had so altered the genital anatomy of the women of Abyssinia and such parts that they were very unlike the women of other countries, and that their natural structure caused repugnance which prevented the purpose of marriage. Thereupon Rome gave way on this point, but the girls’ mothers had to make a solemn repudiation of any “Jewish propaganda” in excision before it was agreed that this “obstacle to marriage” must not on any account be preserved. In the course of time all Abyssinian Christians adopted excision, which takes place by means of a knife or razor when the girl is eight years old. It is always performed by women. [C. K. Rein states that the operation is less common to-day. He adds that complete excision of the clitoris was never practised in Abyssinia, but only a part was removed. Sometimes, on the contrary, the clitoris is artificially lengthened.]

Mungo Park says that the *Mandingo* have no religious concepts about excision,

We have already quoted the view held by Bruce of Kinnaird that the exceptional development of the clitoris among the Abyssinians was a positive obstacle to coitus and birth, and that, therefore, the clitoris was mutilated, since in Abyssinia and the adjacent lands the increase of the people has from early times been considered most essential. He adds that there was no definite date, but that the operation was always performed before marriageable age. He goes on to relate that Christian Missionaries forbade their converts to practise it as they thought it “a Jewish rite!” But the result was that the natural structure of the girls so repelled the men that they

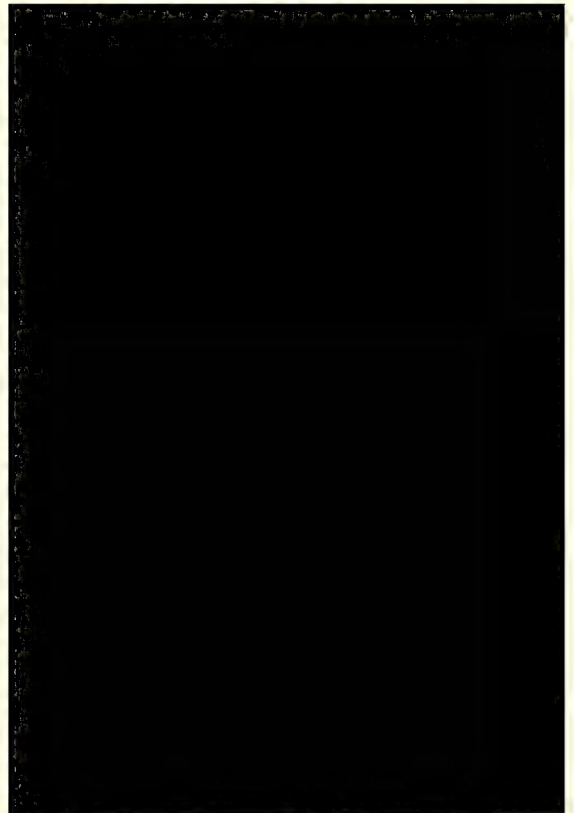


FIG. 312D.—After the operation of excision.  
Fort Hall, Izeri Areas, Kenya. (Photo.,  
A. Brown.)



but think it "useful" in making marriages fruitful. But there are also apparently mystical and magical elements in the associations which have gathered round the practice. [Those dwelling between the Gold Coast and Nigeria are especially addicted to the practice. The clitoris seems here to be over-developed, according to a report received by the Editor. The medical officer, in his account, states that it is about an inch in length, although he does not say if by this he means the clitoris itself, erect or quiescent, or whether it is the glans only to which he refers. At any rate he says that the clitoris and parts of the labia minora are removed.

Among the Ibibo in Nigeria the clitoris is not reported to be in any way over-developed, but cases are known where this occurs. Indeed such a case featured in a local court where one woman accused another of rape, and it was discovered that the prisoner had a much hypertrophied clitoris, which when erect, was able to be used for the purposes of coitus. This case was discussed by an administrative officer with the Editor. For the northern part of Nigeria, see Meek, and for the south, see also Talbot.]

H. Krauss<sup>2</sup> has vouched for a description of the conditions and customs among the Swahili. According to this, if all the children born to any particular woman should die, the woman's clitoris is cut off with a razor and "then the subsequent children live." But, it may be remarked that the Swahili native who was Velten's authority here, said the ablated part was "a little growth under the clitoris." We shall have occasion to refer again to this apparent case of so-called "sympathetic magic."

Velten's highly important account, as taken down from a native's speech, runs as follows :

"If a woman brings forth children that die soon, or if her husband has no long life with her but dies early, she is called *Mwanamke Uwenyi Kisukumi* (lit. woman possessing that which thrusts behind) and the men are in great fear of her. If her Kisukumi is one that kills children, wise women are sought and such as are skilled in magic. Her husband tells her parents that she is ill and must be treated with *dawa*. The parents reply : 'We agree to that.' The old wise women take her into the enclosed place, taking her clothing away and make her sit quite still with open legs for her children die because she has a little growth beneath the clitoris, which is called *Kigwara cha Kuma* and slays the children. Then the magic women search for this till they find it and cut it out and the woman, of course, feels pain ; women that feel pain resist this cure. As soon as the thing is cut out, some *dawa* is smeared on the place and behold there is no wound, nor any pain except for the moment. And her husband can sleep with her again the next day. And should it be God's will to give them another child, behold it lives."

The Comte de Cardi endeavoured to get explanations of the origin of and reasons for excision from the natives of the Niger Delta in Old Calabar and of the Cross River district (*cf.* also Partridge). The usual reply was simply that it was an old custom of their forefathers. One old man said that it kept the girls from having to do with men ; and old women told him that "many years ago" their tribeswomen had often been afflicted with a strange form of madness, and that this madness was much lessened after the operation, so it became generally customary. Russegger found and studied excision in Southern Nubia. He writes :

"In my opinion, this primitive custom is wholly a manifestation of tropical jealousy and its utilitarian merits are all the less because it must necessarily diminish pleasure in coitus on the woman's side, and thus react unfavourably to reproduction. Moreover, it does not by any means always effectually prevent premarital adventures. I know of several cases of girls who, having been treated in this manner, had themselves secretly re-opened and then subsequently



scarified once more and scarred so that they were able to form marital alliances without fear ; their virginity was proof and immortal."

Russegger, however, has confused two distinct operations : excision of the clitoris is not the same as labial infibulation, of which we shall treat presently. Infibulation is much less widely spread than excision, and infibulation is probably an invention of male jealousy, whereas excision is by no means necessarily so. But the peoples who practise excision of the clitoris do not seem to know how or why this custom first arose.

Excision is attended by special ceremonies and is part of a festival. We can distinguish the groups among peoples practising excision ; those who operate on the young child and those who wait till puberty and the puberal initiation rites.

The customs in this respect may be illustrated from a few areas :

#### AGE AT WHICH EXCISION IS PERFORMED

##### (a) *In Early Childhood :*

In Arabia, a few weeks after birth (Niebuhr). Among the Somali, between three and four years old (Paulitschke). In Nubia, in early childhood (Russegger). Among the Fulah in West Africa, soon after birth. In Sumatra (Groot), India (Gait).

##### (b) *At Puberty :*

Certain Malay tribes of the Archipelago, at the second dentition (Epp). Some Persian Nomad Tribes, at marriageable age (Chardin). In Southern Egypt, before puberty (9-10) (Werne). The Mandingo, at marriageable age (Mungo Park), in Kordofan, about eight (Rüppell), among Bechuana (Matchappi) at puberty (Delegorgue). Among the Chuncho Indians in Peru, at 10 years of age (Grandidier).

##### (c) *Before the Marriage Ceremony :*

The Omebi of Southern Ethiopia (Bieber), Balūchistān (Bray).

##### (d) *Uncertain Statements, too vague to classify :*

In Old Calabar, at puberty (Hewan). But Comte de Cardi states that there is no fixed age, but that the operation is generally performed in tender years. In Abyssinia, among the Galla and Agau, according to Bruce, at eight years, but according to others, 80 days after birth.

Bieber gives also the following particulars : among the Abyssinians, seven days after birth, among the Galla, eight days, among the Kaffitscho from four months to one year of age.

Duhousset gives this description of what is done in Egypt :

"Female circumcision consists merely in the removal of the clitoris and is performed on children between nine and 12 years old. The operator, who is generally a barber by profession, rubs ashes on his fingers, grips the clitoris, draws it to its full length forwards and shears it with a single razor stroke. Ashes are then sprinkled on the wound to staunch bleeding and it heals after some days of complete repose.

"I have both seen instances and heard statements from these barber-surgeons of their laxity and carelessness in operating. The full ritual limits of the mutilation should, strictly speaking, include the nymphæ from the level of the clitoris and almost to their junction with the inner fold of the labia majora. Their mutilated remnants then form a cicatrisation rigid and retracted round a gaping vulva in the circumcised Fellahwoman. The effect is singular."

Hartmann<sup>3</sup> says that in Egypt and Abyssinia the prepuce is ablated more often than the shaft of the clitoris itself, or than a slice from the mons veneris.

[W. G. Browne describes the operation of excision which he apparently witnessed at Dar Fur. It is termed in Arabic *chafadh*, and consists of removing the clitoris



a little before puberty or at the age of eight or nine. A woman operates, and some of the girls seen by Browne complained of great pain. They were prevented from walking after the operation, and the parts were washed every 12 hours to hinder suppuration. At the end of eight days most of them could walk, but some were kept in till the 13th day.

Infibulation also is mentioned by Browne as being performed on girls of eight to 16 years of age.

Among the Kikuyu, Kenya, the operations on girls have recently been described by Leakey and by local missionaries and are apparently of two kinds (see Bowie, Agnes Brown, H. B. A. Philip). Although the descriptions are not entirely clear it would seem that three main varieties can be distinguished. There is, firstly, an operation which consists in apparently "snipping the labia majora" (Bowie), but which is more likely to be a form of snipping the labia minora and perhaps a portion of the clitoris. The second form consists apparently of a general cutting and slicing of the entire vulva. Although some writers quoted above do not appear to distinguish between circumcision, excision and infibulation, it would seem from their accounts that the second form of the operation is a preparation for the stage of infibulation, in which the wounded surfaces are made to adhere through contact. The third operation is that of defibulation, or, in some cases, that of making an opening for the discharge of urine and menses if this has not been provided for after the second operation.

The ceremonies are of the well-recognised type and a large crowd assembles for the purpose of witnessing them. The operator is an old woman who passes from girl to girl and performs the operation with what Bowie describes as a "crude small knife not unlike a safety razor blade." (See Figs. 312A, B, C, D, for which we are indebted to the kindness of Miss A. Brown.)

Various reasons of the usual kind are ascribed by the natives. It is said that unless the rite is performed sterility will ensue. Bowie, however, is of opinion that the infibulation is for the purpose of preventing sexual intercourse until marriage, as seems probable also in other parts of the world. From the reports of the medical missionaries sepsis is not uncommon, and suffering is also caused by the suppression and absorption of the urine and menses, for the escape of which no proper provision appears to be made by the natives, if we can judge from the reports. This is certainly unusual, and further investigation is desirable.

Attempts have recently been made by the missionaries to have these customs suppressed by law, although the documents they have kindly sent me do not suggest that they propose any relief for the boys who are also circumcised. The Kikuyu Association opposes any change in the custom and pays the fines of those who are occasionally dealt with by the District Commissioner. Leakey has recently discussed the matter with considerable clarity and common sense. The "infibulation" of the girls is, he thinks, if I understand him rightly, merely an accidental result of a too extensive an "excision" and is not in itself intentional.]

On the Upper Niger, as we have said, Mandingo and Bambara practise excision on girls in this manner, according to Gallieni :

"The young girls are generally between 12 and 15 years old, and the operation takes place at a season when the natives still possess great stores of millet, for the cereal is needed to make the succulent dishes consumed at the ceremonial feasts. The operation is performed by the smiths (metal workers) on youths and by the wives of the smiths on maidens. Both use a plain iron knife, inadequately sharpened. Neither boys nor girls may give any signs of pain or fear during the mutilation. When we showed our surprise we were told that excision makes girls



more faithful to their husbands. But the native women do not trouble at all to remain chaste.

"The families of the circumcised boys and girls celebrate the occasion with dance and song and with much more abundant food and drink than usual. The rich kill goats, fowls, and even sometimes, an ox. The poor folk pick up a stray dog or two in the village and put him into the pot with the rice or couscous. *Dolo* is brewed in every house and imbibed freely.

"After the operation, the circumcised persons are clothed in long robes with hoods over their faces and keep away from their homes till they are healed. The sexes are kept apart. . . . The girls carry little calabashes full of small pebbles like toys. In the morning early they return to their homes. The scars take long to heal, for the natives have nothing to hold the skin together. Convalescence, therefore, usually lasts from 40 to 50 days. When they return to their homes, there are prolonged rejoicings. The boys henceforward have the right to bear arms and to speak their mind in council and the girls may marry."

[Excision is well known in the Northern Territories of the Gold Coast. Among the Nankanse (Nankanni) the operation is performed about the age of puberty. It is considered better for the girl to be excised when still a virgin, so her mother warns her that to go with boys till she is "cut" is not desirable. Whether the girl is a virgin (*yab' pelego*) or not (*sulim*) the operation is the same. She sits on the outstretched legs of a man with her back to him. Her legs are widely separated and the *pukubega* (operator) squats in front of her. The clitoris and any other parts to be cut are seized and severed with a razor, the pieces being buried nearby. The women around utter shrill cries to drown the girl's shrieks. When it is over a woman binds her up with *biro* fibre, and for six days primitive treatment is continued. Nevertheless, some girls die as the result of the operation.

With the Nankanse, Builsa and the Kasena the rite is a preparation for marriage. Other tribes, such as the Kusase, Moshi, Isala, Lobi and Dagari perform it earlier. Amongst the Isala it is said, according to Rattray, that the reasons given are that if the clitoris is removed coitus and delivery are made easier and girls do not suffer ridicule.]

Baumstark mentions customary extirpation of the clitoris among the Warangi of East Africa in the Masai territory, when the girls are between six and eight years old. Expert women perform the ablation with little knives of special shape. The girls live apart for a while in a special building.

Merker writes of the Masai custom :

"As soon as the young girl perceives from certain physical signs that she is about to become a woman, she returns to her mother's hut though she has previously lived in the 'Bachelors' House' in complete and uncontrolled liberty. If several girls of the village are in the same stage of growth, their mothers fix a day and summon the ancient woman skilled in the art of excision (the girls of the *El Kiboron* stock were always excised on the 24th day of the Masai month). But, otherwise, and if there is to be a circumcision of boys in the near future, both ceremonies take place on the same day. . . . No member of the opposite sex may approach the places where youths and maidens are respectively circumcised. On the previous day, the girl's mother crops her head and throws the hair under the skins of her couch. All the child's ornaments are removed and she is attired in a long loose garment made by her mother (*sol gela, pel gelani*). The mother calls on her child's courage and obedience and washes her genital organs in cold water to deaden the pain. The operation is a simple ablation or removal of the clitoris performed with a sharp piece of iron ore (*ol moronja*) such as is used for shaving.\* Then the little wound is washed with milk, which, with the blood, falls to the ground); no

\* Among the Bushmen of the Kalahari Dornan states that a stone knife is used to perforate the clitoris.



styptics are used. The girl remains secluded in her mother's hut till she is healed; she is termed : *es siboli* (plur. *es sibolio*) during this seclusion.

"The boys adorn themselves with bird's claws and ostrich plumes, while the girls wear wreaths of grass round their brow (*ol mǎrisian*) and stick a single ostrich feather through the circlet in front. Both sexes smear their faces with white clay. The women of the village hold a feast among themselves. The girl's father slays an ox, her mother brews honey mead for them. The name for a circumcised girl and a young wife is the same : *es siëngiki* (plur. : *es siëngikin*), and, indeed, as soon as the girl's suitor learns that she has recovered, he hands over to her father the last instalment of the bride price and the wedding may then take place lawfully." (Cf. also Hallis, M. Weiss.)

Of the Wandorobbo, a related tribe, the same authority reports that among them the girls go to visit and say farewell to their playmates in the neighbouring camps some days before they are excised. On these visits they are entitled to take anything they fancy without the owner's permission, such as, *e.g.*, food, articles of clothing and ornaments.

The Comte de Cardi says of the negresses in the Niger Delta :

"The manner of performing the operation varies tribally. What happens in the Old Calabar region is this. The tip of the coconut shell is cut off carefully and rubbed thin and smooth. The 'eye' or knot of the coconut—through which the liquid milk flows—is scooped out and the rind rubbed smooth. The glans of the clitoris is then slipped through the hole and shorn off with a knife or sometimes with a sharp piece of bottle glass that serves as a knife."

[Similarly among the Ibo of the Niger Delta girls are excised on the fourth to seventh day after birth. The Abaw delay the operation till a girl is likely to become pregnant, whilst the Abuan, a semi-Bantu tribe, await the first menstruation. Amongst the Egabo-Sobo of Osua Konike at the junction of the Nun and Forcados branches of the Niger, and also elsewhere, the girls are excised before marriage "at the time of the coming of small breasts." The patients lie on reed mats and the oldest available woman is the operator. She performs her task with a small triangular blade and receives a bottle of gin from the mother of the girl, the other expenses being borne by the future husband (see Talbot<sup>2</sup>).

In Dongola, where excision is apparently delayed till the girl is nubile, consummation of the marriage, according to Crowfoot, sometimes does not take place for 40 days after the ceremony if the results of the operation have been severe.]

The Wolof make a festival of circumcision. The whole village assembles, dressed in their best, to the sound of the drum and an ear-splitting orchestra. The girls are clothed with all available splendour and hung with all the family trinkets. They are led through the village in procession, then back again to the square or open space where a great dance is kept up for hours, all taking part. The girls are led into the blacksmith's hut by the old women of the tribe. For it is his wife's privilege to perform the rite, when dawn grows grey. Each young girl takes her seat on a block of wood set at a convenient distance from the wall of the hut, leans back so that her body is supported firmly, and spreads her thighs open so far as she can. The woman operator grips the inner labia between fingers and thumb of her left hand and slices them off with an old knife which strongly resembles a saw. A plaster is then applied. The girl remains in her father's hut for a week, then for another three or four weeks she goes to the stream, limping on crutches, to bathe herself in the ritual prescribed. At the expiration of this time the bandage is removed.

According to Dr. Jacobus X., who gives these facts, there does not seem to be any actual religious meaning in excision among these people.



[In the country of the Bavenda, in the northern part of the Transvaal, the excision of girls was introduced through Basuto influence. It is called *musevetho*, or *sungwi*, and is connected with ideas which link it to a secret society. Children may attend on paying two shillings. The function takes place in a hut in an enclosure outside the village. Various rites are performed and many people are attracted to the *musevetho* and persuaded to give gifts. Initiation into the various mysteries takes several months, but to-day less time is involved in the preparations. Finally the girls are taken down to the river, where an old woman awaits them. The clitoris is cut and a brand is placed on the outside of the thigh. After the ceremony Stayt declares that all the girls go to the kraal of the headman and join the boys who have been through the circumcision lodge. Festivities take place and continue for a fortnight. Boys and girls have sexual intercourse and then finally the girls are taken again to the river and smothered with red ochre and fat. After resting a few days they are washed and return home.]

According to Bieber<sup>2</sup> circumcision (*girsett*) consists in the ablation of the clitoris (*ginter*) seven days after birth. The old women (*gerasch*) nip off the glans with a fingernail covered with a piece of cloth. Among the Galla the operation is eight days after birth. Here again the clitoris (*hadu*) is excised. The women who operate receive salt as a reward. Among the Kaffitscho the girls are excised between four months and one year of age. Having placed the girl on her back with the legs widely separated, the operating old woman seizes the clitoris and nips it off with her nails. Among the Omebi removal of the clitoris is accomplished before marriage.

[In Balūchistān female circumcision is well known. Two methods are practised, according to Bray. In the one an old woman cuts off the clitoris; in the other the labia are scarified. Among the Brāhūīs and Marī Balōch the first operation is considered a cure for sterility, and often it is a last resource. The Jaṭṭ have the custom of performing a certain operation at marriage although details are lacking even among themselves. An old woman, armed with a razor, performs some operation on the vulva of the bride. Whether it is cutting the hymen or the clitoris or merely snipping off the protuberant portions of the nymphæ is not known. Bray states that it prevails among the Balōch of the East, and also elsewhere.

Generally speaking, female circumcision is regarded as a religious ordinance in Balūchistān. It is supposed to be acceptable to God. The true reasons for the practice are hard to discover, and even if the original meaning be lost the modern reasons may be various and also conflicting. Bray surmises that the removal of possible obstacles may be one of the reasons, but little can be said until we have detailed accounts of the normal vulva of the girls of the district, and these records are lacking.

Regarded as a whole, the custom of female circumcision is not common in India, except where the influence of Islam is pronounced, as in Baroda, Bombay and the North-West Frontier Province. Even where formerly practised, as among the Dandi, Bohoras and other Shiahhs, it is dying out. Sometimes the operation is performed in childhood and sometimes before marriage, as in Sind. Women are the operators and the clitoris is usually cut off and sometimes apparently the labia minora.]

We have already mentioned the custom in Indonesia. Riedel<sup>1</sup> reports that it is practised on all the Molucca islands, especially by the Moslem population. There is generally a partial resection of the clitoris.



Riedel says of the people of Buru :

“Before the beginning of menstruation (and in boys before puberty) the teeth are filed down almost to the gums and circumcision is performed. The girls are bathed and placed across a stone and an old woman cuts away a portion of their *glans clitoridis*. It is said that this is done to suppress and limit their desires before marriage. Burnt and pulverised sago leaves (*ekbaa*) are applied as a styptic. Then the woman carries the girl in her arms into the hut which she must not leave till her wound is healed. She has a special diet till she is convalescent. The custom is said to be Mohammedan in origin.”

On Ceram Laut and Gorong, Riedel<sup>1</sup> found clitoridectomy practised between seven and 10 years of age with very festive ceremonial. Death from hæmorrhage afterwards was “not infrequent,” but the victims had the satisfaction of entering Mohammed’s Seventh Heaven. The operation was performed by the wife of the priest and the girls were bathed afterwards.

On the island of Celebes, states Riedel,<sup>4</sup> in the districts of Gorontalo, Bone, Boalemo and Atinggola, the girls were circumcised at the ages of 9, 12 and 15 respectively. The term used was, *mopolihoe olimæ*, i.e., “to be washed with *Citrus histrix*.” There were great festivities although these involved less expense than for the boy’s circumcision, and the operation was performed by women.

Wilken found that these ceremonies were usually performed at an earlier age in girls than the analogous rite in boys : J. L. van Hasselt states the same of the Menangkabau of Sumatra. The same is true of the Javanese, who excise the girls between six and seven years of age. The people of Macassar and the Bugi (Celebes) operate from three to seven, whilst around Gorontalo, 9, 12 and 15 are the preferred ages, but even this is earlier than the age for boys.

The exact extent of the mutilation is only known as regards the Javanese, the natives of Macassar and the Bugi. The Javanese cut off a piece of the clitoris—perhaps the glans—and bury it, wrapped in a cotton cloth with a piece of kurkuma wrapped in *kattun*, under a *kelor* tree (*Moringa pterygosperma*). The operation is termed *putingitil*, i.e., the breaking of the *itil* or clitoris.

Among those in Macassar and the Bugi, according to Matthes, the mutilation is very slight, just enough to cause some slight bleeding. It is called *kattang* or *katta*, i.e., scraping. The operation is performed by two women, of whom the assistant stands behind the girl and holds her in position so that the vulva is widely open and the clitoris exposed. (Epp seems to have erred in thinking the labia minora were also excised.) Excision, like male circumcision, has a certain religious character among the Mohammedans of the Malay Archipelago.

Riedel<sup>10</sup> has a very similar report about the people of Sulu. He says only Mohammedans practise clitoridectomy among that people ; a small piece of the glans—*pokooti*—is cut away with a sharp knife. The girl sits on a woman’s lap with thighs widely separated. Her legs are held by two other women. The wound is rubbed with the juice of *Curcuma longa*, and after the operation the child is bathed. There are also special dietetic rules till the girl has quite recovered.

This operation is performed between nine and ten years of age. Marriage and sexual intercourse alike are strictly forbidden to the uncircumcised girl.

Steller stated of the Kamchadale that their pendulous labia were considered a disgrace and were cropped, like a dog’s ears, when young.

In Ecuador lived natives of the Pano linguistic stock. They were visited in the eighteenth century by the missionary, Francis Xavier Veigl. He learnt that they had been in the habit of circumcising their girls to make them, so it was said, more competent in fulfilling their natural duties.



The Chuncho and Campa tribes, on the Ucayali River, practise excision on girls at 10 years of age. There is a seven days' festival of all the neighbours, who assemble with dance and song and copious draughts of chicha, an intoxicant brewed from manioc. On the eighth day the girl is mercifully stupefied by a big drink of this powerful narcotic, and the operation is performed by a woman who staunches the bleeding with rinsing and pouring water on the wound.

Then the songs and dances recommence and the girl is laid in a hammock and borne in triumph from hut to hut. She is considered a grown woman after her operation, according to Grandidier.

Finally, we may refer to a *European* instance of this practice among the sect of the Skoptsi, who formerly flourished in Russia and Roumania (Lipovans). They mutilated themselves, making themselves eunuchs for the kingdom's sake, in the words of Matthew (xix. 12). The mutilations were performed on both sexes, and were more extensive in women, including both breasts and genitals. E. v. Pelikan has given a full and fully illustrated account. [Cf. also Grass, Leroy-Beaulieu, Pittard, F. v. Stein, Tandler and Grass, Teinturier, Tsakni, Wysozki, and *Le Seepit*, which deals with the Roumanian sect.]

The mutilations of the female genitalia may be either the excision of the nymphæ and/or of the clitoris or an ablation of the outer edges of the labia majora, together with both clitoris and nymphæ: this leads to a twisted scar which effectually bars the introitus.

Pelikan gives three sample illustrations of the mutilated organs of Skoptsi women. All three were young, and their hymens remained unruptured, nor was the frenulum of the outer labia injured:

In the first case, there is asymmetrical excision of the nymphæ. On the left side, in the central portion of the edge, there is a triangular jag. One side of the triangle is horizontal—measuring 0.7 cm., and an oblique side runs upward at an angle of 45° (acute). The lacuna in the inner labium is 1 cm. wide. The edges are curved and thickened. The right inner labium has apparently been cut away quite from the root in its lower third section, and there is only a sort of tip or cluster of fibres about as large as a hempseed on the lower extremity of the intact section.

The second of Pelikan's illustrations shows symmetrical ablation. In the upper (frontal) third of both nymphæ, there are diagonal cuts from above downwards, slicing away a broad tongue-shaped piece from either side. The breadth about 0.25 cm. A second excision slashes the middle section on both sides, removing triangular portions somewhat resembling that described in the first case; the edges are curved and thickened. These two bilateral excisions leave a sort of flap about 0.3 cm. wide on either side, and both have grown into the adjacent mucous surfaces of the outer labia, leaving scars which indicate that this mucous surface was intentionally scraped or abraded at the same time and the free flaps of the nymphæ lightly grazed along their outer edge. For it is necessary to abrade both surfaces if their final coalescence is intended.

The third of this set of illustrations was, like the others, life size. It gave a *coup d'œil* of the mutilated organs of a female. There is no longer any pudendal cleft in the strict sense of the term. Instead there is an oval aperture of between 2 and 3 cm. in diameter, which appears to slope downwards, contracting as it slopes; for the woman is lying on her back. The posterior surface of this orifice has a rather large meatus urinarius in its centre, and slightly below this, on either side, little *carunculæ* in the membrane which are probably all that remain of the excised inner labia. The mons veneris, with its covering of grey hair, bears a broad, irregular, roughly triangular scar 3 cm. wide at its base. The apex of this scar is downwards and a slightly jagged linear scar descends therefrom, down the centre to the meatus. There is no trace of any clitoris. There are also no outer labia in the true sense of the term. Their whole upper portion must



have been cut away and the wounds drawn together, pulled upwards and together towards the centre with some force and then sutured tightly, as far as we can judge from certain regular pigmented spots. Thus the labia majora are no longer "lips," but tiny folds or ridges of skin which hardly break the level of the scarred surfaces around them; while the furrow between labia and thigh has been almost obliterated.

[Removal of the clitoris has long been advocated by certain writers for masturbation in girls and for such female ailments as pruritus. In 1867 and 1868 the English medical world was convulsed by revelations concerning the opinions and practices of Isaac B. Brown who performed the operation at his London Surgical Home as a means of curing forms of insanity, epilepsy and hysteria, as well as masturbation. It appeared that not only was the clitoris excised but the nymphæ were clipped to their base, and the whole vulva cauterised. The case excited enormous interest and Mr. Brown was removed from the Obstetrical Society of London. However, many of his grateful patients, who believed that they had been saved from insanity by his ministrations, combined with others to present him with a silver dessert service in token of his "singular success in the treatment of female diseases" (see I. B. Brown).]

## 12. THE INFIBULATION OR OCCLUSION OF THE VULVA

The operation, which has been termed *infibulation* or "*sewing up*," or better, *occlusion*, stands in close association with *excision* of labia or clitoris, but the two are not identical.

Infibulation does not necessarily imply surgical sutures.

Moreover, infibulation appears to be really a specifically *African* practice, whereas excision is not limited to that Continent. North-Eastern and Central Africa are, so far, the only regions known to us in which infibulation has been commonly practised (*cf.* Freimark).

Linschoten certainly stated that he had found the practice in Pegu in India, but, as no other investigator has corroborated this, we may assume that his memory was slightly at fault.

[Yet this traveller describes the operation, stating that at first he himself did not credit the story. He states that the vulva is sewn up, leaving a small opening only for the purposes of urination. When the girl becomes nubile her husband opens the vulva himself.]

Excision does not necessarily imply infibulation, but infibulation (of one kind at least) must, in all circumstances, imply excision, and extensive excision, before there can be raw surfaces sufficiently large to form a solid scar. Either by surgical stitches or—as seems more frequent—by appropriate bandages and attitudes for days at a time, the raw surfaces are brought into close contact with one another and unite to form a solid scar.\* The excision is so arranged that this hard scar of connective tissue occludes the whole vulva with the exception of the urinary opening. In India rings are passed through the labia majora (*cf.* Fig. 313) in some regions, to prevent sexual intercourse in the husband's absence, and as is well known, the Girdle of Chastity was used for this purpose.

In the Middle Ages of the Christian Era, Maqrizi related the customs of the Beja: he said that they cut off the inner lips in young girls and then sewed the

\* [A similar method for uniting a torn perineum used to be employed by obstetricians. Beck states healing took under a week, even when the laceration extended to the anus.]



rimæ pudendi together. And this practice still prevails among the tribes south of the Nile Cataracts, the Galla, Somali, Harari and women of Massowah. Among the Bedouins of the Western Bayuda Steppe, north of Khartoum, the girls are infibulated between the ages of five and eight years. In Kordofan, excision and stitching are inflicted at eight years ; among the Harari at seven. Accounts differ about the Somali : some say from eight to ten, but Paulitschke says from three to four. Lanzi specifies the third year as that which prevails for infibulation among the Danakil.

The method of executing this mutilation varies in different tribes. The final results, however, appear fairly constant in all tribes.



FIG. 313.—The warrior's return. One woman (right) is infibulated. Indo-Persian miniature. (Mus. f. Völkerk., Berlin.)

Comte de Cardi relates that in the hinterland of Ekrika (Niger Delta), the interior surfaces of the labia majora are scraped till they bleed, and then drawn and pressed together so closely that they unite and close the vaginal orifice.

Among the Somali and Harari the preliminary excision removes a substantial part of the clitoris and abrades the labia majora or "outer vulva." Probably the inner lips or nymphæ are cut away at the same time. The operation is performed by skilled women and followed at once by a real "stitching" according to Paulitschke. The materials used for the sutures are cotton thread, horse-hair or fibres. Only a small part of the vulval cleft remains unstitched. The girls have to rest for several days with bound feet and thus the abraded surfaces unite and are scarred over.

King<sup>3</sup> says that the Somali operate on their girls at eight years old and sometimes



earlier. There is always clitoridectomy as well as infibulation. The clitoris is drawn to its full length and cut off, and the membranes of the labia scraped raw with knives, leaving only a very minute section free, on either side, in the centre of the vulva. Then the labia are pressed together and sutured with two or three stitches. The girls' knees and thighs are firmly bound together. The healing process takes a month and is accompanied by fumigations. King states he has often seen little girls hopping painfully about with the help of a long stick just outside their huts. They were obviously crippled by bandages. He adds that the aperture left by the operation is no wider than the normal anus (*cf.* Fig. 317).

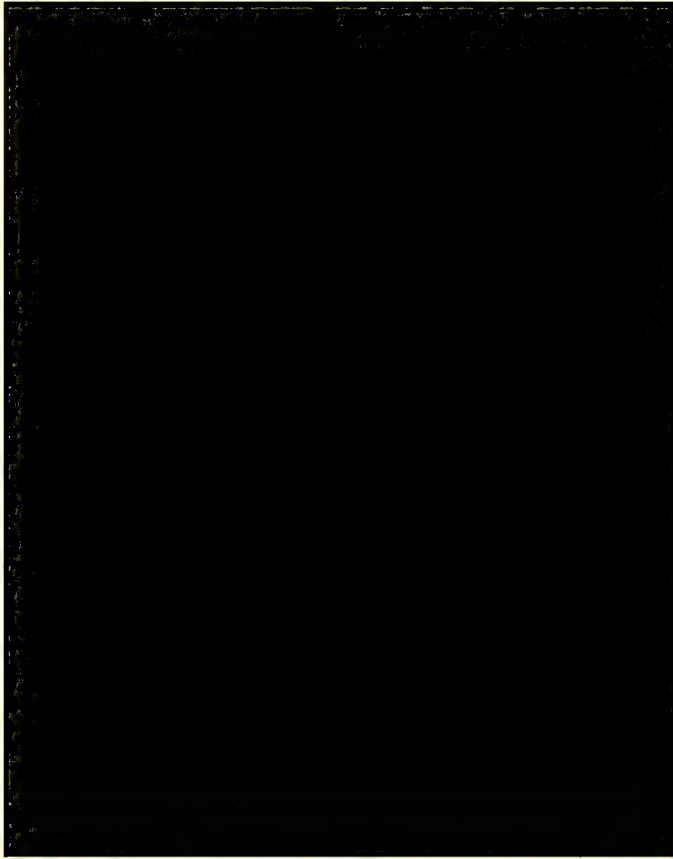


FIG. 314.—Infibulation. First stage. The vulva is still partially open. Danakil. (Mus. f. Völkerk., Dresden.)

Burckhardt also mentions a literal *stitching*, known as “Mukhæyt” or “sewn up,” and states that on inspection he found the vulva completely occluded with the exception of a small opening at the urethra. He adds that the operation is by no means rarely fatal.

Vita Hassan writes as follows about the Sudanese women, after mentioning that the female circumcision common to all Islam means excision of part of the clitoris :

“In the Sudan, most of the tribes extend this operation to a hideous mutilation. This is performed on children six years old with all the festivities customary at a wedding. Clitoris, labia majora and the most projecting edges of the inner lips are shorn off with a razor, leaving the pudendal region a bare flat wound. Then the raw edges are firmly sutured together, leaving one small slit into which a tiny tube of cane is slipped for urination. After some days have



elapsed, the edges unite, the wound is cicatrised and closes and the tube can be removed. The woman has become a monster and the sacred and accursed rite has been fulfilled."

[Professor and Mrs. C. G. Seligman<sup>4</sup> have described the operation among the Kababish, one of the most powerful of the Arab tribes of the Anglo-Egyptian Sudan.

It is usually performed in early childhood between the third and sixth year. After healing has taken place the vaginal orifice is represented by a small opening at the posterior commissure. Sometimes a small plug is inserted to prevent the

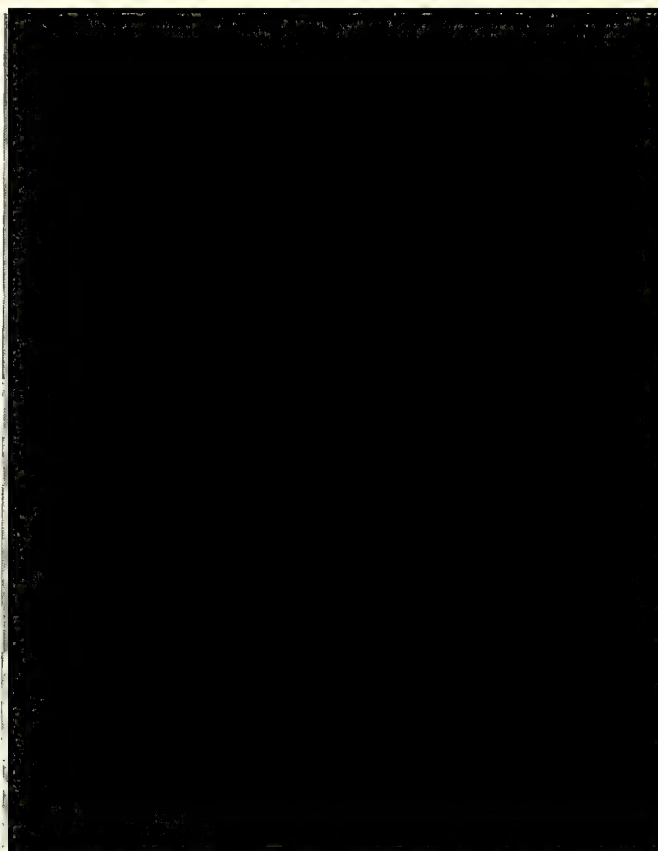


FIG. 315.—Infibulation. Second stage. The vulva has closed with the exception of an opening at the urinary meatus. Danakil. (Mus. f. Völkerk., Dresden.)

urethra from becoming closed. After the operation the legs are tied together for two or three weeks.

For the purposes of the operation the child is placed on her back with her legs flexed upon her abdomen, and the thighs separated as widely as possible. The old woman who acts as operator then seizes the clitoris and cuts it off as closely as possible and then proceeds to carve away the whole of the vulva, leaving only a small portion just above the perineum. Even part of the mons veneris was sliced away, a fact which explains the frequent absence of hair in this region. The wound is then plastered with flour and the legs secured. During the operation the child's cries are drowned by the spectators, who included several boys and girls.]

Bieber<sup>3</sup> gives particulars about the Moslem Galla of Harai: they infibulate little girls from eight to ten years of age, and the process is termed *mutscha durba* or "stitching." The mother of the child operates on her. The inner lips are scraped



raw, their edges sewn together with horse-hair and the feet tied together firmly for two days. There is a festival with hospitality to friends and fellow tribespeople. Only a small orifice is left in the vulva for urination and menstruation. Before she is given in marriage, women, specially expert in their business, cut open the genital cleft, according to measurements furnished by the prospective husband.

It appears that actual stitching is less frequent than pressure of the raw lateral surfaces together with tight bandaging of the lower limbs and resting recumbent till the wounds heal. Dr. Peney, a Surgeon-in-Chief to the French Forces in the Sudan, writes as follows :

“ Between the age of seven and eight years the girl is handed over to the matron

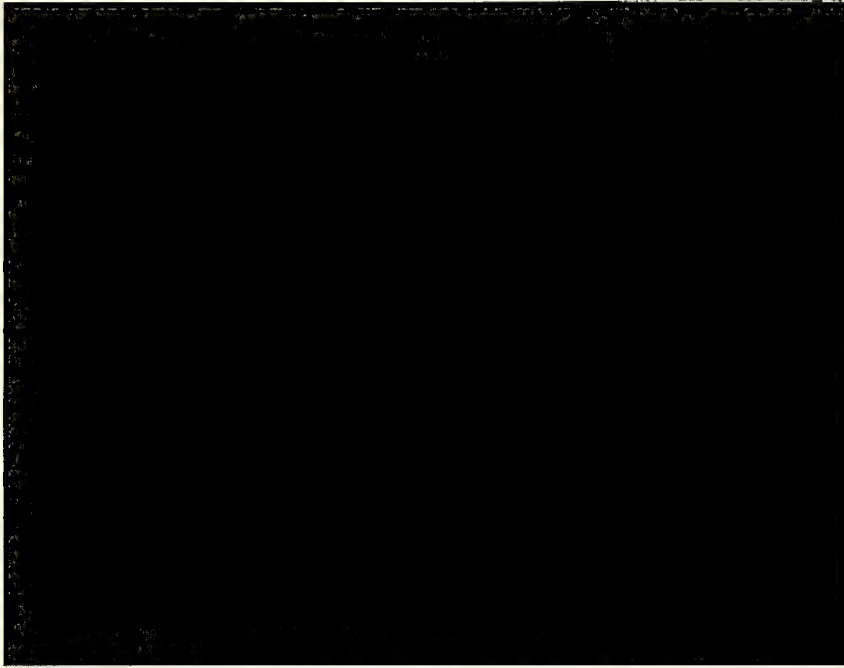


FIG. 316.—Infibulation. Third stage. The operation is finished. Compare the appearance of the normal vulva (left). Danakil. (Mus. f. Völkerk., Dresden.)

whose office it is to perform the operation. Some days beforehand the mother of the family invites all her female relations and acquaintances to assemble in her abode, and the ceremony is preceded with food and merriment.

“ When the hour comes, the child is laid on a bed and held down and in position by the assembled women, while the matron, kneeling between the patient's thighs, begins by slicing off the tip of the clitoris and the edges of the inner lips. Then the razor shears along the rims of the outer lips, removing a ribbon of flesh about 2 cm. wide. It lasts between four and five minutes. In order to drown the shrieks of the girl, the assembled guests and kin raise the loudest and shrillest din conceivable until the process is over. Then, when the flowing blood has been staunched, the girl is laid flat on her back, her legs extended and tied firmly together so that she cannot walk, otherwise the desired effect would not be produced. Before leaving the girl to the healing process of nature, the matron introduces a hollow cylinder of wood, about as thick as a goose's feather, into the lower portion of the vagina, between the bleeding edges of the wound, and this is kept in place until the scar is completely formed, for purposes of micturition and menstruation. This tiny orifice is all that remains of the vaginal outlet.”

Lanzi wrote that the Danakil girls have to lie still with tightly bound legs until the wounded region is fully cicatrised (Figs. 314 to 316). [Jousseau, in



his "Impressions," has given a long and vivid account of the operation and its results among the Danakil.] Cailliaud reports similarly of the women in the Sennaar country. He mentions the extremely small size of the artificial outlet: "hardly sufficient for natural needs."

Sir Samuel Baker gave a detailed account in Latin of the Nubian method to the *Lancet* in 1867. He describes how the girl is laid flat on her back on the ground. Her legs are then raised and flexed as far as possible, the thighs being widely separated. The lips of the vulva are then almost entirely cut off with a sharp knife, and a small tubular reed is introduced. This done, the edges are placed in close proximity so that finally healing takes place, leaving only the orifice in which the

reed had been inserted. Healing is assisted by the fact that during the process the legs of the girl are tied together. When it is complete the vulva, "as nature designed it," is no longer visible. The parts are as smooth beneath as the *mon veneris* above and the girl resembles those examples of the sculptor's art where the genital organs are lacking. The aperture in which the reed was inserted fulfils the purposes of urination. [(Cf. Sir S. Baker; Godard). Cadalvene and Breuvery describe the operation in Dongola. After the vulval lips have been clipped the parts are drawn together and the legs secured. The child of eight or nine remains thus for a couple of weeks, natural needs being met by the insertion of a tube.]

Panceri had the opportunity of examining a 20-year-old Sudanese girl who had been infibulated. He says:

"Instead of the pudendal cleft, there is only a linear scar, but it is possible to feel the clitoris moving under the mass of scarred connective tissue, which entirely encloses and hides it. Only when the knees were widely separated was it possible to see the slit which represented the vaginal orifice; the ridged crest of the inner labia having coagulated with the outer. The superior commissure, the clitoris, the urethral orifice and the frontal section of the inner lips were invisible, for the outer labia had become united."



FIG. 317.—Vulvoanal region of a negress of 14 years. Alexandria. (After a prepared specimen by Kaussmann (Berl. Anat. Mus., 1894, 167) for Fritsch.)

Finally, we may quote Werne, with reference to the tribes immediately south of the First Cataract of the Nile:

The older women lay the victim of custom down and graze and scrape along the surfaces of both the labia majora with a sharp knife till they are raw, leaving only a small intact strip towards the anus. Then they take a *ferda*—the long strip of cotton cloth with fringed and tasselled ends which both sexes wrap round them—and tie the girl's knees tightly together so that the raw surfaces agglutinate, or grow together with the exception of the small untouched strip on either side. A quill, or tube of cane is slipped into this portion for purposes of nature. The girl has to lie with fettered knees, except when nature calls, for the period of 40 days, and this time appears obligatory and in correspondence with what has been proved necessary in order to produce complete cicatrization.

The illustration (Fig. 317) of an anatomical specimen brought by G. Fritsch from Alexandria, and presented by him to the Berlin College of Anatomy, shows



part of the body of a negro slave girl of 14. The labia majora are tightly sutured in their anterior portion ; and the small round aperture which alone gives access to the inner genital tract is no larger than the anus. Labia minora, clitoris and urinary orifice are alike invisible and enclosed within the cicatrisation.

What is the purpose of this mutilation ? There can hardly be any doubt of the answer. Infibulation is performed simply and solely in order to enforce complete abstinence from sexual intercourse on the girls who are subjected to the operation.

Werne is quite correct in pointing out that infibulation and cicatrisation are indeed a more certain means of compulsion than any of the locks and springs of the " girdles of chastity " with which our knightly forefathers in Europe clothed their wives before they themselves rode forth on Crusade or other adventures. Werne quotes the rejoinder, half plea, half excuse, with which these native girls often reply to a stranger's caresses and attempts at approach : " El bab makful "—" The gate is locked ! "

King,<sup>3</sup> however, states that this purpose is not invariably attained. Although slave traders often have the operation performed on their freshly captured " wares " in order to sell them more profitably, even they are sometimes subject to loss on that account.

He mentions that among the Somali, so far from infibulation always compelling abstinence, a form of incomplete intercourse is known to take place for money (12 dollars).

[Various other minor operations are reported. In Sind, Gait reports that the orifice of the vagina is occasionally treated in order to diminish its size, although details are not available. This contrasts with the further custom (reported by Fritsch<sup>7</sup>) of sewing up the vagina completely so as to favour anal coitus. This is apparently performed in the East on certain prostitutes in whom the vagina has become too capacious to afford satisfaction to those clients who prefer even anal coitus with a girl rather than with the male prostitutes.

Moreover, Gait states that in Sind a ring is occasionally passed through the vulva of girls just above the vagina so as to afford protection against illicit affairs when suspicious husbands are away from home.

In 1885 Mr. W. T. Stead caused a sensation by publishing an account of the trade in virgins in England, in which he stated that means were employed to simulate virginity in girls who had previously been deflowered.]

### 13. DEFIBULATION OF WOMEN

The almost complete occlusion of the genital cleft in women who have been infibulated makes normal sexual intercourse quite impossible, as has already been fully explained.

Impregnation, however, may sometimes occur as the result of attempted approach and accident. But such impregnation and gestation cannot lead to a normal delivery without further operative interference. So, in order to make both functional intercourse and motherhood possible, the girls whose genital organs have been closed and cicatrised, must be defibulated—in King's expressive phrase, or we might say, ripped open.

Let us see what various authorities say of these further operations.

Cailliaud, whom we have already cited, writes of the Sennaar women :

" Before the consummation of marriage, the unnatural adhesions must be removed. If peril to life ensues, razor and red hot irons are to hand. The sensibilities of these races seem too



much obliterated, too primitive for them to attach any weight to the exquisite suffering and the serious and inevitable injuries of such procedures—procedures invented and imposed by the dominant sex, in order to guarantee for themselves the enjoyment of that virginity which is apt in other lands to be so evanescent. However that may be, it is a serious enough affair to put the girl in a fit stage to fulfil her conjugal duties. If there is a woman, who, through lack of means, has been unable to prepare herself, then the husband must do what he can. If he succeeds in impregnating her, which is difficult enough, then she has the right to insist on the services of one of the older women, well versed in the cruel trade, who may be able to break down those obstacles which hinder the processes of childbirth. Moreover, the young widow who cherishes a desire to marry again, does not hesitate to submit a second time to the operation, although such cases are not common.”

Vita Hassan says of the Sudanese natives :

“ This procedure is customary among all the Mohammedan tribes of the south from Berber to Sennaar, including Khartoum, Metemma, Shendi, Wâd, Madani, Haraz, Sennaar and their environs.

“ It is said that the operation is not only part of a religious ritual, but also has the purpose of prophylaxis against a certain disease, which afflicts women not so mutilated. The expectant mother has to face further mutilation. The child at birth cannot pass the cicatrizations in the normal way, so the muscles from groin to reins are severed in order to liberate the infant. And then this laceration is sewn together like the pre-marital wound, and the woman is once more impenetrable. Some time after delivery, a new *ssehâma* (the name of this mutilation) makes the wife and mother available once more.”

Peney, whose account of the Sudanese we have already quoted, describes defibulation as follows :

“ When the Nubian maiden marries, she has recourse to the wise woman, in order to have her vulva prepared and enlarged, for the infibulated aperture is far too small and too inelastic—because of the scars of connective tissue which surround it on every side—to admit even the roughest and most merciless husband. So the expert matron intervenes and makes a longitudinal slash, and intercourse takes place ; but first the matron introduces a fresh tube or cylinder of wood or vegetable fibre and far bulkier than the first, into the vagina, to the distance of 3 or 4 inches. This remains *in situ* for a fortnight until the new wound has healed and scarred when its presence becomes unnecessary.

“ Nor is this all. If the woman conceives—and she generally does so—she is again put through the ordeal of the knife ; for the same rigid circlet of scars that locked the vulva against copulation from the outside is equally a barrier against the dilation of that part through which the baby emerges. So what will not stretch must be slashed open with wide and deep strokes. Often the child at the moment of passing the genital cleft is grievously injured. I have myself seen cases of mortal wounds inflicted on infants as they entered the world, by careless or clumsy operators. . . .” “ But,” he adds, “ the young girls seem more attached to it than their husbands, for they say that those who have not been infibulated would not find a husband.”

Baker and Burckhardt corroborate these accounts in detailed descriptions. Burckhardt maintains that no sooner is the defibulatory mutilation performed than it is followed by copulation “ Unde illa Arabum sententia : Post diem aperturæ, dies initus.”

Werne says of the tribes immediately south of the First Cataract of the Nile :

“ When the girl whose virginity has been preserved in such a revolting manner becomes a bride, further indecent cruelties are practised. One of the women who perform infibulation visits the bridegroom immediately before the marriage in order to obtain exact measurements of his member. She then makes to measurement, a sort of phallus of clay or wood and by its aid she incises the scar for a certain distance and leaves the instrument wrapped round with a



rag—in the wound in order to keep the edges from adhering again. Then the wedding feast is celebrated with hideous din, the man leads his bride home—every step she takes means pain—and without giving the fresh wounds time to heal or scar, he exercises his marital privileges.

“Before a child can be born, the vulva has to be opened again throughout its length, but, after delivery, infibulation is again inflicted, according to the husband’s orders, either to the original or other dimensions : and so the process continues.”

Brehm fully corroborates Werne and other authorities :

“Before marriage, the bridegroom sends the bride’s family a wooden replica of his membrum and the slit in the girl’s organs is made carefully to this exact measurement. If she

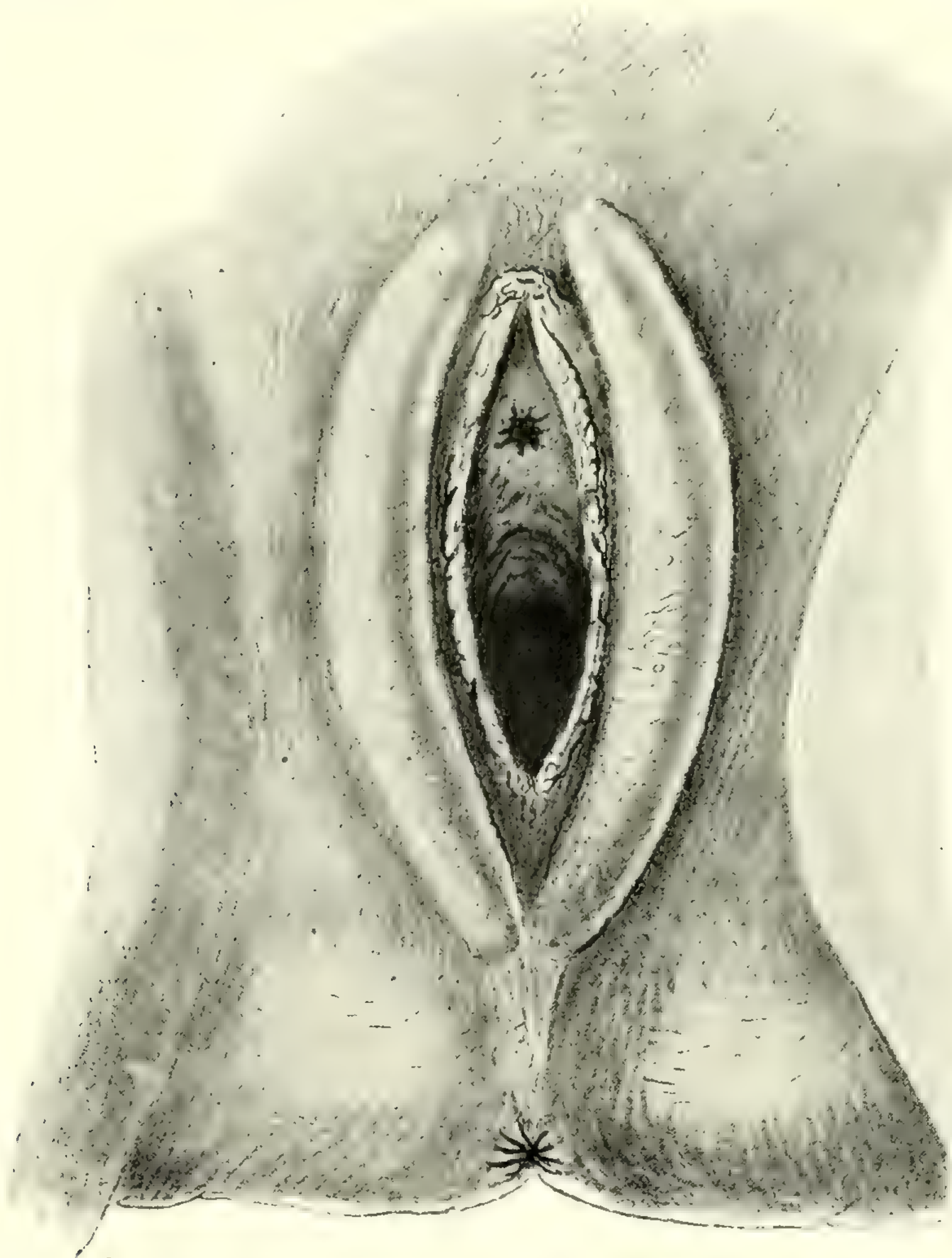


FIG. 318.—Vulva of a negress from Old Dongola, who had been infibulated and then opened. Notice the stump of the clitoris and clipped nymphæ. (From a drawing by R. Hartmann.)

becomes pregnant, there is a further mutilation before delivery, namely, a slash from rear to front, towards the mons veneris.”

Lanzi reports exactly the same of the Danakil. He adds that the barbarous custom has become so ingrained that some women voluntarily request re-infibulation after childbirth.

King<sup>3</sup> gives further particulars about the exact procedure among the Somali :

“In the town of Zayla, an elderly and expert woman of a strange tribe—*midg’an*—accompanies the bridal pair to their chamber. This woman performs the opera-



tion on the bride, who is held fast by the husband, so that her convulsive struggles are in vain. Then the woman leaves the room or tent and the kinsfolk and acquaintances outside the door dance, sing, scream and clap their hands in order to drown the bride's shrieks of pain. And in the interior of Somaliland, the young husband himself generally makes the necessary incision while two of his near male relatives hold down the bride."

The young negresses of Ekrika, in the delta of the Niger River, are operated on for a second time by an aged woman in the depths of the woods. When sexual maturity begins they repair to the forest, and the woman perforates the cicatrisation with a rounded ivory stick about as thick as a pencil.

Hartmann was able to make a drawing from life of a Sudanese woman about 30 years of age from Old Dongola. She had been infibulated and then defibulated. The drawing (Fig. 318) shows the stump of the clitoris and the hard vestiges of the inner labia. The urethral aperture is just under the clitoris. The cicatrisation following these mutilations is most unfavourable to maternity, as is indeed obvious.

Beurmann told Ploss that among the tribes who infibulate, very difficult labour often occurs; whereas other African women generally have remarkably easy deliveries.

There are also further dangers and disasters. Egyptian hospitals contain syphilitically infected women who in spite of the operation suffer from extensive ulcerations. Uhle saw many negresses who had been slaves with severe lesions. They had been infibulated, sold as slaves, dragged in an interminable march from their homes in Central Africa. Then a syphilitic slave dealer had picked them out of the chain-gang, cut open their scars and raped them. Their open wounds soon became extensive syphilitic sores which they had neither means to cleanse nor to disinfect. For weeks they marched under the merciless glare of the sun till the hospitals offered them a refuge.

It often occurs that after childbirth the young mothers are re-infibulated. Hartmann, Brehm, Werne and Vita Hassan concur as to this. And Hartmann adds :

"Slaves, too, are infibulated thus. There are cruel masters—and some of them are Europeans!—who have had this thing done even twice or thrice to the same women who have been their mistresses—and then they have sold them."

Werne became acquainted with a young widow in the Berber district who bore hideous and loathsome mementoes in the shape of scars. Her husband had subjected her to infibulation seven times in succession within a brief period of time.

Linschoten briefly confirms the fact of defibulation according to the husband's wish and instructions.

Ignaz Pallme states that in Kordofan most tribes inflict a second incision on betrothed girls 20 days before marriage is consummated. This "second excision" must, it appears, be defibulation.

Rüppel writes :

"The defibulation of the bride, that is to say, the opening up of the infibulated parts, is not performed until the whole bridal price, so long haggled over, has been paid. The extent of the incision depends on the husband's wishes : it may be large or small. When the date of a birth approaches, there is a further incision to permit delivery. Then, after childbirth, the whole area is once more abraded and cicatrised, so that the conditions prevalent after the first operation are restored. The woman remains in this state while she nurses her baby at the breast. Then the mutilations recommence and, if the husband so desires, they may be repeated till



after the third or fourth confinement. But they are often omitted after the first. I have known young widows whose husbands died shortly after their confinement when their wounds had closed and 'adhered.' They were in a grievous state and forced to remain so by their parents and kindred. For, if they had been defibulated on their own initiative, they would voluntarily have become public prostitutes."

Paulitschke says that among the Somali the primitive woman-surgeons above mentioned, or the girls themselves, slit open the infibulated vulva ; but that it is generally only fully opened up before childbirth.

Such are the possible results of pathological jealousy reinforced by superstition.

#### 14. THE MONS VENERIS IN COMPARATIVE ANTHROPOLOGY

The formation, proportions and appearance of the mons veneris depend on three factors. The first is the general bony framework of the pelvis, especially the precise width of the angle formed by the two rami of the pubic bone. The second important factor is the amount of adipose tissue or fat ; and the third the density, disposition and colour of the pubic hair. And as all these characteristics show wide ethnical differences there must obviously be definite characteristics in the mons veneris, according to race. We are, however, far from being able to formulate these differences ; for the available material is very slight and imperfect. We are even far from well informed about the different types of structure and pigmentation in this region among women of the civilised white races. For, though there are hospitals and clinics and infirmaries, public and private, throughout Europe, and doctors in attendance therein, there are very few qualified observers who have taken the trouble to note or record these anatomical features. M. Bartels<sup>1</sup> has emphasised the lacunæ in our knowledge of this portion of anatomy and anthropology and not wholly without result. In the scheme of investigation suggested by the special (1884) Commission for the Study of the Human Pilous System (selected by the German Anthropological Society), the hair of the body has also been listed as worthy of study. But, so far, there has been no appreciable result.

The lower portion of the mons veneris meets the labia majora ; their upper or anterior commissure forms the boundary of the mons on its lower extremity. At the sides the mons reaches to the groins, and above it is bounded by the lower of the two curved lines which cross the hypogastric area from side to side, with their concavity below the navel.

In women of Central Europe the generous amount of adipose tissue raises the mons veneris somewhat above the level of the surrounding regions in a softly curving mound. Moreover—in most cases—after puberty, it is covered with a more or less abundant growth of hair, which shows many variations (see p. 313 & ff.).

The general pelvic angle, or inclination, also affects the relative prominence or the reverse of the mons veneris, and, moreover, there are also apparently distinct differences in the amount of pigmentation in the mons, for it would seem that, in some cases there is increased pigmentation. But, so far, nothing definite can be stated about this.

As we have said, anthropological investigation among primitive races is very imperfect in this respect, both for subjective and for objective reasons, as can easily be understood.

We have, however, a few reliable photographs which show representatives of various ethnic stocks, but so far very few.



In the portraits of negresses from Loango and district furnished by Falkenstein, the mons veneris seems in every case only slightly prominent and poor in adipose tissue. The same may be said of the Abyssinians from Colonia Eritrea and near Massaua, photographed by G. Schweinfurth.

Through the courtesy of Herr Knypers, the Berlin Anthropological Society has some photographic studies of Javanese girls. In all of these the mons veneris is well developed and rounded with the exception of one very young person in whom there is not yet any actual mons, though there seems a slight increase of local fat.

The Samoans and a Caroline Islander depicted in Godeffroy's album, are well developed in that region.

Riedel<sup>1</sup> makes special mention of the fact that in the Islands Lakor, Moa and Leti, the brachycephalic women had well developed adipose tissue in this region. In this respect they would appear to differ from the other cranial type among the island population as well as from the other women of the Molucca Archipelago.

According to Jacobus X., often cited already, the Tahitian women have, in some cases, "very highly developed" montes veneris.

Hyades and Deniker found the women of Tierra del Fuego under-developed in this respect.

Lockhart and Morache both mention a peculiar local characteristic in Chinese women and these authorities associate the enlarged mons veneris with the crippling of the lower extremities already fully described.

Morache writes :

"Many people have assured me that in the Chinese women, the whole lower or frontal portion of the pelvis, *i.e.*, the mons veneris, forms a massive mound, separated from the abdomen by a deep fold, and that the labia majora are proportionately enlarged and developed.

"The Chinese find it natural and obvious that the voluntary and deliberate atrophy elsewhere should be compensated through a natural equilibrium by this abnormal expansion."

C. G. Seligman made further enquiries about this, but he has not obtained any corroborative evidence.

Both the Berlin Museum of Ethnology and other collections in European Museums possess a number of highly intricate Chinese works of art, which are known as spring-leaves (*tch'üntch'eh*) or secret sports (*Pi-hi*). They represent erotic scenes to which we shall have occasion to refer later on. All the women depicted in these works of art have crippled feet and all have also very high development of the mons veneris, and thick protuberant labia majora. So it is not impossible that Morache's informants spoke the truth and that we have here a highly ingenious and indirect method of plastic alteration of the female form, or accentuation of the genital zone.

## 15. THE GROWTH OF HAIR ON THE BODY : DENSITY, DISPOSITION AND COLOUR

The growth of hair on the mons veneris occurs in girls at puberty ; the pubic hair in boys appears at the corresponding age. In the summary of the main secondary and tertiary sexual differences, M. Bartels pointed out that there are characteristic and different dispositions or arrangements of hair on the body in men and women respectively. On another occasion (Bartels<sup>1</sup>), in a study of the subject, he wrote :

"On the lower abdomen in women, there are two clear, parallel, curved lines or folds in the skin, with their convex surface downwards. The upper line begins slightly above the





FIG. 319.—The semicircular and suprapubic folds in a girl. The lower fold forms the upper margin of the pubic hair in woman.

anterior superior iliac spine and cuts through the linea alba about the point dividing its middle and lower third section. The lower line is less shallow and more sharply curved. It begins slightly below the anterior superior spine and runs in the approximate direction of Poupart's ligament, the two lower lines from right to left meet slightly above the upper rim of the symphysis pubis. The mid-section of this lower line forms the upper limit of the normal female genital hair.





FIG. 320.—The suprapubic fold seen laterally. The upper limit of hair on the mons veneris is clearly shown at the lower border of this fold.

“ The lower line is simply the external sign of the place where the abdominal wall merges into Poupart’s ligaments and the symphysis respectively. All the skin above this lower line must be reckoned in the abdominal area, while below the epidermis is part of the outer covering of the pelvis, and its central portion consists of the skin of the mons veneris.



“In men, whose chest and abdomen have an appreciable hirsute covering, these hairs mingle with the pubic growth in a longitudinal arrangement. But in women, chest and abdomen are normally free from hair, and only the mons veneris is covered with a cluster of hair ; thus the lower of the two furrows or lines must form its upper boundary, for anything above the line would be really abdominal.”

Two Viennese artists' models (Figs. 319 and 320) show the disposition of the pubic hair and the two folds very clearly. In one, the pubic hair does not extend to its normal upper limit. In the other the pubic hair reaches the lower line but has not spread to its normal extent at the sides. A third young girl, still a child, has these folds clearly defined (Fig. 321).

In certain exceptional cases we find that the pubic hair in women extends above its normal boundary, even to the mid-section of the abdomen so far as the navel. This is a heterogeny, namely, a symptom or characteristic abnormal or anomalous to the sex of the person displaying it. Similarly, it is an heterogeny for a male person to have smooth glabrous chest and belly with a thick tuft of hair of female type just above the genitals.

The lateral limits of the genital hair in normal women are the two inguinal furrows, or groins ; normally, woman's hair does not spread to the inner surface of her thighs. This occasionally occurs, but it is undoubtedly exceptional, and, in fact, heterogenous. The lower and rear boundaries of the hirsute zone may also be exceeded if there is a growth of hair over the posterior or inferior commissure of the labia minora, the perineum and around the anal orifice. Hair round the latter region is considered a definitely male secondary characteristic.

[Although a posterior growth of pubic hair is, as stated in the text, a male characteristic, the absence of the same in women is by no means a constant feature. As stated earlier (see p. 313 & ff.), the vulvoanal region in blondes is quite different from that in brunettes ; and the brunette of Alpine stock cannot be compared with the Nordic blonde except to illustrate profound differences.\*

The pubic hair in brunettes sometimes extends upward to the navel and in a posterior direction it is often found encircling the anus. Moreover, the dorsal region of the thigh is often covered with hair and the growth of hair on the legs is sometimes so great that, when shaving or depilatories are not used, the hairs may be seen protruding through thin stockings. It is only in cases where a thick pilous system is associated with other characteristics that heterogeny can be usefully discussed, although it is true that these are often found associated with general hypertrichosis.]

As excessive growth of hair may be found in women in more than one direction, so also may lack of the normal amount of pubic hair ; many women have only a very slight growth. This may be considered an arrested development, a semi-infantilism. We shall refer to these anomalies in a later chapter.

Our speculative forefathers were much puzzled to account for the purpose of the pubic hair in both sexes. Opinions varied from that of Galen, who considered their purpose ornamental, “*Jam vero et circum pudenda pili quoque necessario provenerunt (calida enim ac humida sunt haec loca) operimentumque ac ornamentum ejus loci partibus præbent, non aliter quam nates quidem ano, præputium autem pudendo*” (Tom. III., 910)—to those of Burkard Eble and the great Danish anatomist Caspar Bartholin, who both preferred the view that the hairs were put there for

\* [Amongst German blonde women Bartels himself found the posterior extension around the anus far from rare, and Rothe came to the same conclusion.]



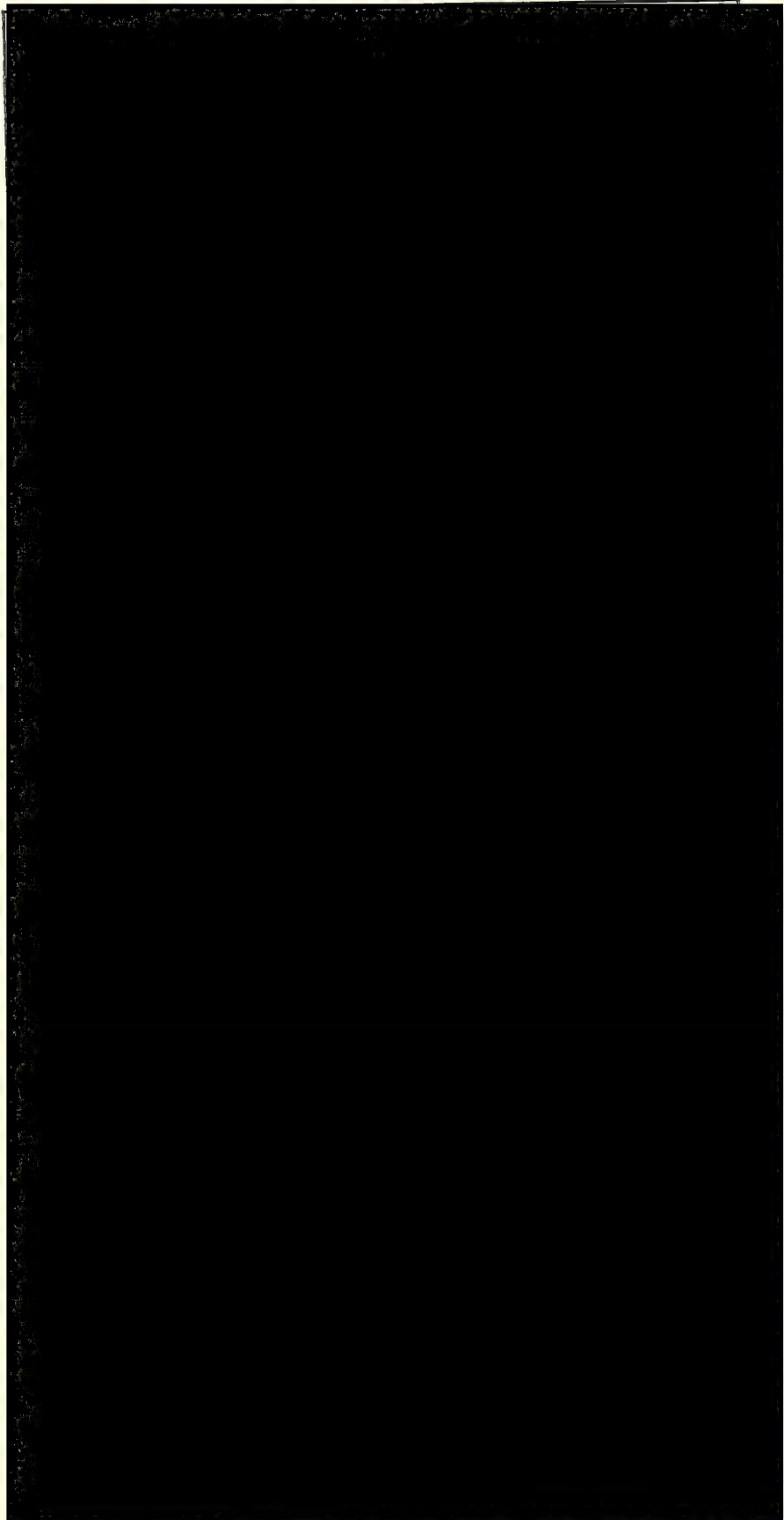


FIG. 321.—The semicircular and suprapubic folds in a girl before puberty. Note the apparent anterior position of the vulva due to lack of adipose tissue and absence of pubic hair.



modest concealment ! The same teleological point of view in which human views of morals are attributed to the processes of evolution was expressed by Gerdy. The hair is, he says, modesty's veil, and he notes that it is a remarkable thing that this region should be covered just at the time when, " si j'ose parler ainsi," the genitals awaken and emerge from their chastity. By thus covering them nature inflames the imagination and rouses to a higher pitch " la plus impérieuse de toutes les passions." [T. Bell seems to have held a similar view.]

Blanchard taught that the purpose was wholly utilitarian : that of protection of the sensitive mucosa from cold and accident. Fabricius thought the hairs absorbed perspiration and relieved pressure in coitus by acting as pads.

Eble had a fuller and more logical opinion on the pubic hair, which he thought served, after all, several purposes :

- (1) To dissipate the perspiration imperceptibly, and receive that flowing down from the abdominal regions ;
- (2) To prevent excessive coital friction ;
- (3) To afford a sign of sexual maturity ; and
- (4) To " facilitate the accumulation and mutual interchange of electricity between the two individual opposite poles in copulation."

He continued :

" At least there is proof of the connection between these hairs and the generative function in this, that, in human beings, the thickness and crispness of pubic and genital hair is generally in exact ratio to the potency of the individual, and that the most libidinous people are, as a rule, very hirsute in that region. It would be interesting to ascertain whether there is the same relation between hirsuties and fertility or fecundity in women. If it is really true, as Jahn maintains, that no women with absolutely hairless mons veneris and genitalia ever became pregnant, it would be impossible to deny this interaction."

There is, of course, an association between extreme hairiness and sexuality. Both are based on and modified by endocrine factors. Natural and sexual selection may have helped to develop pubic hair, for it could also serve for protection. There is, however, another purpose, served also by the hair of the head and of the armpits ; namely, the collection, concentration and emanation of personal odours. (Cf. Schifferdecken, *Archiv. für Menschenkunde*, 1925, 35 ff.)

The first authority to tabulate such facts as are here available was the late Berlin gynæcologist, Eggel, who left his work to Max Bartels<sup>1</sup> to be continued and completed.

Analysis of Eggel's tabulated data resulted in the conclusion that the coloration of the pubic hair has a certain tendency to association with the colour of the hair on the head ; but that this is a tendency, not an absolute rule. Moreover, there is no such tendency to definite association with the colour of the eyes :

One thousand adult women were examined and the results tabulated :

Dark eyes . . . . .	239
Dark hair on head . . . . .	333
Dark hair on mons veneris and genitals . . . . .	329
Light eyes . . . . .	761
Light hair on head . . . . .	667
Light hair on genitals . . . . .	671

Many dark-eyed women had light genital hair ; the same light genital hair was even sometimes found in women whose head hair was dark. Texture, amount



and arrangement of pubic hair varied greatly from short to long, sparse to dense, straight and soft to wiry and curly.

We have mentioned and defined the condition known as *heterogeny* with special reference to hair. This, according to Bartels, seems indeed to be frequent among fair-haired women in Germany as well as among brunettes.

On Max Bartel's suggestion, Rothe\* made an exact comparison and tabulation of his results in another group of 1000 women, studied in his Berlin practice. He found that among the North Germans there was an overwhelming preponderance of fair hair, especially medium fair or dark flaxen.

Women with red hair on the head had invariably either red or light genital hair, never dark. Women with black hair on the head had red genital hair in one-third of the cases ; in almost two-thirds they had brown, and in two cases, dark flaxen. The Jewish women had generally brown pubic hair. Among 52 out of 977 North German women the hairs on the labia majora were perceptibly paler than on the mons.

Rothe stressed the amount of individual variation in amount and arrangement of the genital and pubic hair in women :

"The extreme diversity in this respect would appear hardly to admit of formulated rules. . . . In almost every case, there are individual characteristics which distinguish it from all the rest. Nevertheless, two main types of pubic hair growth may be recognised together with many intermediate and transitional grades."

Later he adds :

"Among a group of 490 women, 477 were North Germans, 11 Jewesses and 2 Poles. There were two main types on the mons veneris. In one main type, the hairs grew mainly in a longitudinal strip down the middle of the mons and along the rims of the labia majora ; and, secondly, they covered the whole of the mons and the outer lips equally. About half the cases were either (a) longitudinal or (b) triangular. In both main groups, there were several sub-types" (p. 103).

He adds further details, for which we must refer students to his own work. However, it may be mentioned that in 420 North German cases he found curly hair most often, and straight least, and that both amount and length were more often moderate than excessive. He only found complete pubic hairlessness in one case : the woman was fair in colouring. He found several cases of heterogeny in the group of 1000 cases ; in 42 cases the hair grew above the normal boundary on to the abdomen, and in 146 (p. 73), it grew sideways out on to the thighs and backwards on to the perineum. Among the first heterogenous group was one Jewess ; among the second, three Jewesses. Rothe also found that blonde women incline more to heterogeny than brunettes [although in his statistics he does not distinguish the lateral from the posterior growth (see p. 74)].

We will now consider what little is known to us of this subject in women of coloured races.

We have already alluded to the Chinese representations of nude women in their "Bridal Books" or "Spring Scenes." In these the genital and pubic hair is depicted as black, and appears short, straight and not thick, but rather sparse, nor does it by any means cover the whole of the strongly developed mons veneris, but forms a somewhat narrow triangle with apex upwards.

Wernich says of the Japanese women that their genital and pubic hair was very sparse in comparison with the abundance of their head hair and the strong, coarse

\*[Cf. also Rodecurt.]



texture of the single hairs ; moreover, the growth on the mons veneris was very seldom triangular in the area it covered but generally oval, " as though to indicate the contour of the vulva." Baelz<sup>1</sup> states that the montes veneris of Japanese women are flat and covered with sparse and coarse pubic hair. Doenitz found absolute hairlessness in a surprisingly large number of cases. But this is not considered an attraction by the Japanese, for one of their most offensive terms of insult is "*kawaragé*," or " hair like a brick," *i.e.*, with a vulva as bald and hard as any brick.

The Japanese women of the Manchurian Korean type (*cf.* Baelz<sup>2</sup>) had also very flat, glabrous montes veneris, and sparse, stiff hairs bordering the labia majora.

[In the erotic literature and illustrations of all countries may be found much material both for the anthropologist and social historian. The erotic " Picture books " of the East (of which the British Museum contains an admirable collection) illustrate the various forms of sexual allurements and criteria of " charm " which cannot be obtained elsewhere. Thus Japanese drawings show the distribution of pubic hair in women very clearly and confirm the gynæcological data. The hair shows the sparse, coarse growth mentioned by Wernich evenly distributed on the well-developed mons veneris and uniformly absent in the posterior direction (*cf.* F. S. Krauss<sup>20</sup>).]

Jacobus X., already cited, says the Moi women in Cochin China have fairly thick, crisp pubic hair of the deepest black, whilst the Annamese women have only sparse hair on the mons. The same authority reports of the women of Cambodia that they also have sparse hair on the mons : it is dark brown in colour and slightly curly.

In the seventeenth century, the traveller and explorer Tavernier<sup>1</sup> maintained that " after leaving Lahore and the Kingdom of Kashmir . . . all the women are naturally unprovided with hair on any part of the body."

Some photographs of Javanese girls are described as follows by M. Bartels :

" There are eight young women of whom only one is so completely hairless that there must have been deliberate epilation. The other seven are somewhat hirsute ; their well-developed montes veneris are thickly covered with long curly hair which grows closely. In some of them, the lateral portions of the mons are hairless. The hair extends downwards along the labia majora for some considerable distance so as to conceal the vulval cleft."

Stratz<sup>3</sup> had the opportunity of examining over 2300 native women of Java. He wrote :

" The body has generally very little hair. Eyebrows are thin and narrow. The genital and axillary hair is apt to be artificially plucked out, as can be told from the hard surface of the parts. A hirsute mons veneris is rare. In cases where the genital hair has not been removed, it is apt to curl slightly and be lighter in tint than the hair of the head."

Roth reports abundant hair of the Sea-Dyak women on Borneo. Jacobs<sup>2</sup> states of the Achinese on N.W. Sumatra, after mentioning individual variations and the effect of crossing with other ethnic stocks, that his informants told him that the labia majora were hairier as a rule than the mons itself, " a condition that seems to be typical of the people of Indonesia."

Steller states that the Kamchadale have thin black tufts of hair on the mons, and Schliephake found very slight pilous development among the Eskimo of Cumberland Sound.

There have been various statements as to Tierra del Fuego. v. Meyer mentions very flat mons with slight adipose deposit in an elderly Fuegian woman whose



symphysis pubis projected in such a way that the outline was clearly visible. The hair was a mere down, fine in texture, and composed of hair  $\frac{1}{2}$  cm. in length. The younger of the two Fuegian women, according to v. Bischoff, had only moderate development of the mons. The same results are recorded by R. Martin<sup>5</sup> of another Fuegian woman, who had a flat mons with sparse hair.

Hyades and Deniker reported of their 15 cases :

“ Only two had a few hairs on the mons, the other thirteen were quite glabrous.”

Their detailed accounts, however, modify this statement, for they corroborate “ very short and sparse hairs ” or “ a few stray hairs ” in exactly half of 12 cases.

Among African and Oceanian women we find different characteristics.

Jacobus X. describes the women of negro descent in French Guiana as characterised by a strongly marked mons and a few hard and coarse genital hairs.

v. Bischoff performed an autopsy on a Sudanese Negress who had a strongly developed mons, abundantly covered with crisp black hair ; whilst Waldeyer says of a Koranna woman :

“ The mons veneris is well developed with a layer of fatty tissue of between 2 and  $2\frac{1}{2}$  cm. thickness and covered with short black curly hair, which forms single little spiral curls. The hair continues along the labia majora and thins out towards the perineum which shows a few strong and coarse single hairs on either side.”

The Bushwoman who was celebrated and depicted as the “ Hottentot Venus ” had short, woolly tufts ; and the same was the case with Afandi, a Bushwoman on whom Luschka and Görtz made a post-mortem and reported fully.

Conradt gave accounts of nine Adeli negresses from the Ashanti Mandated Territory (Togoland). Here, too, there were apparently great individual differences from “ rather profuse ” to “ sparse ” and “ patchy.”

Hutter described the Bali negroes in the grasslands of the Cameroon hinterland as “ in both sexes more hirsute than the forest folk. The hair of their heads is dense and thick as in all negroes. The armpits are slightly hairy, but the pubes have thick hair, especially in the women.” He adds that he does not know whether this profusion is due to their habit of shaving the parts on certain occasions.

In New Britain Finsch noticed quite fair hair among the native women, although black was more frequent. But this fair hair may have been due to bleaching by strong acids in the preparations used for epilation (see Section 17).

Bässler referred to the genital hair of the native women of the Bismarck Archipelago in an address to the Anthropological Society of Berlin ; he stated that the heavy growth was extremely conspicuous, as the hair was usually dyed red like the locks round their faces. The women wiped their hands on their pubic hair whenever they were soiled or damp, as we are accustomed to use towels.

Jacobus X. has recorded the abundance of pubic hair in the women of Tahiti and New Caledonia, but, according to Riedel,<sup>1</sup> the reverse is the case among the natives of the Aru, Luang and Sermata Islands. The same is the case in the women of Tenimber and Timor Laut but their head hair is reported to be long.

Riedel<sup>1</sup> also quotes a term of opprobrium and insult among the Ceram Laut and Gorong Islanders, which indicates that thick genital hair was considered repulsive by these people.

Our comparative knowledge of the pilous system of other regions of the body is even slighter and more fragmentary. The hair of the armpits is the next in extent and importance to head and genitals. It usually appears at puberty, as does



the pubic hair, and in males, the beard. We shall speak in greater detail of the course of puberty in a later chapter.

There has been much discussion as to the purpose and function of the axillary hair. Eble pointed out that the armpits contain not only hair follicles but abundant sweat glands and exude perspiration very freely. Friedenthal suggests that the main purpose of the hair is to promote the evaporation of the odorous secretions of the glands which exercise, as is well known, a strong sexual effect.\* (*Cf.* Veit and Stoeckel, V., 1, p. 65.)

Rothe investigated the colour of the axillary hair in 1000 persons of adult age. All were women, and four nationalities were represented. He obtained the following results :

1000 CASES : TABULATION OF COLOURS OF AXILLARY HAIR

Colour.	In North Germans.	Jewesses.	Poles.	Dutchwomen.
Black . . . . .	7	—	—	—
Brown . . . . .	151	12	1	—
Dark flaxen. . . . .	393	2	—	1
Yellow flaxen . . . . .	383	3	4	—
Ashen fair ( <i>blonde cendré</i> ) . . . . .	14	—	—	—
Red brown . . . . .	1	—	—	—
Bright red . . . . .	8	—	—	—
Reddish fair . . . . .	3	—	—	—
No axillary hair . . . . .	17	—	—	—
Number examined . . . . .	977	17	5	1

These results show a strong prevalence of yellowish and light flaxen hair in the axillæ of North German women and girls. The darker tints of flaxen are only a little more frequent than the brighter. Brown hair is much rarer and ash blond rarer still ; then comes red hair and rarest of all, black, in 7 cases. Among the Jewish women, the axillary hair was brown in over half the cases, blond in 5, and black in none. The Poles had yellow hair in 4 cases, brown in 1. The only Dutchwoman had dark flaxen hair in her armpits. The axillary hair is lighter in tint than the hair of the head, and in many cases than eyebrows and pubes ; and it is much rarer to find darker axillary hair than dark eyebrows and pubes.

In 16 of these cases (one Pole, 15 Germans) Rothe found different coloured hair in the armpits on left and right respectively.

\* [The odour of the perspiration from the armpits is undoubtedly a factor in the widespread habit of shaving this region among white people. The “ deodorisers ” of commerce are largely employed also for this purpose, and male opinion appears divided as to the desirability or not of the practice. In some the odour has a powerful and stimulating effect ; in others disgust is awakened instead of approval. (See Van de Velde, “ Ideal Marriage,” pp. 28 etc.). The following verse from Mirza Rahchan Kayil (Husain Izzat Rafi, nineteenth century) after the version of E. P. Mathers, illustrates the matter from one point of view.

“ Oh, this scent floating from your neck, your breasts, your arms ;  
That circles about your thighs and your little belly ;  
This scent that is fed for ever and for ever  
From two shady flasks under your bright arms,  
I carry the scent of your body about with me.”]



Among the nine Adeli negresses examined and reported on by Conradt, he mentions axillary hair in only one case. She was a girl of 16, and the hair was very sparse. But the Attakpami girl, who was between 18 and 20, had thick axillary hair.

Riedel says that on the Babar Islands many women have bare, glabrous armpits, and that the Aru, Luang and Sermata Islanders have thin axillary hair. The women of Tenimber and Timor Laut have thin but long axillary hair.

The Javanese girls depicted in photographs have apparently very little hair in this region. But they are all quite young, which may account for its absence.

Baelz found only slight development of axillary hair in Japanese women. The same seems the case in Tierra del Fuego, according to the reports of Hyades and Deniker.

The hair on the other bodily areas is seldom mentioned. Conradt speaks of a fine and slight down on the body of one Adeli negress of 25 years. He found the body covered with downy hair in 5 cases, the arms and legs in 3 and the legs alone in 2.

F. v. Luschan<sup>2</sup> introduced six Pygmies from Ituri to the Berlin Anthropological Society some years ago. All showed fairly considerable pilosity. For example, the two women had just as much hair on their shins below the knee as rather hairy European males. And among all of them, if the light fell diagonally across their bodies, a very fine pale *down* became visible over the whole body.

The Ainu are, as is well known, very hairy. Baelz<sup>2</sup> says :

“ Their women share this quality so far as I could observe, but they are very modest and timid. In girls and women between 20 and 25, in whom only the feet just above the ankles were exposed, the ankles were as hairy as in extremely hirsute European men ; and the disposition of the hair was somewhat different, stopping abruptly at the ankles. Perhaps this is due to the long drawers they wear bound tightly at the ankles. One never sees an Ainu woman with much facial hair, though they deny attempts to shave it off. In Italy and Southern France, women with pronounced dark moustaches are quite commonly seen.”

Koganei describes the Ainu women thus :

“ They are, of course, much less hairy than their menfolk, but, in comparison with Japanese or European women, the relative hirsutism is as much greater as between Ainu, Japanese and white men. At some little distance, their legs look quite swarthy, because of the profuse hairy growth.”

In Ancient India young maidens must sometimes have been afflicted with hirsutism, for among the signs which are mentioned as contra-indications to wooing and marriage in girls, we find : “ She who is bearded,” “ whose shins and legs are hairy,” “ who is black with hairs all over her body,” or “ who has hairs on her hands, her sides and flanks, the slopes of her breasts, her back and below her knees ” (Schmidt<sup>8</sup>).

[Hair on the chest is not so uncommon as is usually supposed. In Rothe's 1000 cases 176 had hair on the areolæ and 29 had hair between the breasts. In the same series 17 had hair on the breasts themselves excluding the areolæ.]

## 16. PUBIC HAIR IN FOLKLORE AND LEGEND

We have already dealt with speculation and superstition relative to the exact purpose of the pubic hair. Traditional opinion has always accepted profuse hair



in these regions as a sign of strong sexual instincts and functions, and lack of hair as a sign of sterility in women. These opinions can be contrasted with those expressed in folklore and legend. Scientific observations were not always of value in the past !

Burkard Eble has the following curious note :

“ Women’s hair is straight as a rule ; even their genital hair becomes straight as life proceeds, whereas, in the prime of life from 30 to 40, they are crisper and curlier than even in young maidens.”

Among the Siberian Tungus, according to Georgi, thick pubic hair is considered a “ monstrous growth,” and attributed to evil spirits. And the husband of a woman with such an affliction was entitled forthwith to divorce her.

On the other hand, complete lack of pubic hair in women is a ground for divorce in Japan, according to Baelz.

Henri de Heer is credited with stating that pubic hairs were used for medicinal and pharmaceutical purposes in Europe in the sixteenth century. They were burnt, together with other substances, in order to revive wounded persons and staunch wounds by fumigation. But they could only afford relief to men if they came from the bodies of women and *vice versâ*.

Another form of sympathetic magic is associated with pubic hair on the Moluccan Archipelago. Riedel<sup>1</sup> reports that on Serang, Eetar and the Kei Islands, the girls gave their sweethearts a few of their hairs from head and pubes as love tokens : this gift is reported as an infallible means to keep a lover faithful and devoted. This is a form of primitive logic and we find similar ideas and practices still in certain parts of Europe, as will be mentioned in a later chapter of this book.

Genital and pubic hairs are also remedies against evil spirits. Ribbe says of the Aru Islanders :

“ Men, women and children wear charms and amulets hung round their necks to banish sickness and evil spirits. These amulets are little bags or pouches hung on thongs and containing such *pomali* (tabooed) objects as curiously shaped and coloured pebbles, pearls, animal’s gallstones, pubic hair from women, and so forth.”

In Serbia, if a peasant child falls very ill and witchcraft is suspected, a threefold fumigation is performed with hairs shorn from armpits and genitals of both parents. And the following exorcism is uttered : “ Flee thou away, oh weird one and born of a weird one, thy place is not here ! Father and Mother created this life and defend it now with this burnt offering of hair and banish all harm from it, for it has no place here ! Flee thou away, thy place is not here ! ” (F. S. Krauss<sup>18</sup>).

Finally, we may remember that many races believe that the exposure of the genital organs is an infallible means of thwarting and exorcising evil spirits. This is a very profound archaic custom. It was even practised by Martin Luther, who was tormented by the nightly suggestions and visions of the devil and knew no means of self-defence, except the exposure of his own hind quarters.

[The question of the exposure of the body or of its parts leads to a discussion of the problem of *ritual nudity* into which we cannot enter here. Ghosts are said to be frightened of nudity, and in some parts of the world when a death occurs a man will expose his penis and a woman her buttocks (see Trebitsch). In a consideration of all these matters the *life-giving* nature of the genital organs should always be borne in mind. For a list of references to ritual nudity, see Goodland p. 718.]

In China, so some allege, there is an ancient custom of depicting the two sexual



and procreative symbols, *Yang* and *Yin*, on the lintels of doors in order to banish evil spirits. This whole circle of concepts and associations shows how intricately and how deeply primitive elements and sexual elements are mingled with the life and thought of people in the most varied grades of civilisation, even at the present day and as any exact observation easily proves.

## 17. THE MONS VENERIS IN COMPARATIVE ETHNOGRAPHY AND SOCIOLOGY

We must now briefly consider sociological customs and ethnographical differences in the treatment of the mons veneris and body hair among various races. In many cases there are special ritual customs, hygienic or magical in origin and purpose.

We have mentioned certain analogous practices in discussing excision and infibulation. According to some authorities those severe mutilations include a portion of the mons veneris as well as clitoris and labia.

Probably the favourite and the most frequent method of treating, adorning or "improving" the mons veneris is by the removal of the hair (depilation). Among Mohammedan peoples depilation is enjoined on all women as a ritual. But it is also found in non-Moslem races all over the earth in the most various and the unlikely quarters and sections of the community.

The favourite Turkish preparation for removing pubic hair is *pigmentum aureum* (Arsenicum sulphuratum flavum) and burnt chalk in equal parts and moistened to a paste with rose-water. This paste is applied to the hairy areas and then removed after a short time, and the hairs are removed with it. This is the universal Oriental depilatory, known in Turkey as "*Rusma*" and in Persia as "*Nureh*," according to Polak. In Persia, as well as in Turkey, the married woman is expected to remove the hairs from her armpits and genitalia regularly in a warm bath, but the Moslem maidens and the Christian Armenians are exempt from this custom, according to Häntzsche.

[Among the Turkish population in Bulgaria, Ivanhoff states that before marriage the pubic hair of both sexes is removed by means of calcium sulphate. It is considered sinful to indulge in sexual intercourse unless the hair has been removed.]

Polak declares that the term used for this procedure is *hadschebi keschidew*—to obey the law—but women of elegance and fashion pluck the hairs away with pincers till the growth ceases.

At one time the sale of *pigmentum aureum* in the Near East was so great that, according to Belon, the farmers of the tax on it were expected to pay their Sultans a yearly tribute of 18,000 ducats.

On the Guinea Coast of Africa, Monrad records the following custom among the young negresses. The unmarried pluck out their genital hair; the wives let it grow freely.

Jacobus X. states that the Wolof women shave their genital hair with pieces of glass from broken bottles.

Hutter records occasional shaving in this region after childbirth and after each monthly period among the negresses of Cameroon.

Zache says of the Swaheli women in Tanganyika territory :

"They remove the hair from their genitalia regularly by means of resin from the Mtondôo tree (*Calopgyllum inophyllum*, according to Stuhlmann), which is rubbed into the skin, and then the hairs are pulled out. A more recent and fashion-



able depilatory is arsenic borrowed from the Arab cosmetic lore. It is applied together with chalk in a paste made with water, and then warm fomentations are applied. This is said to be less painful than tondôo-resin." The phrase used for epilation in the secret speech of the Swahili women is "to sweep the yard clear."

Epp declares that Malay women in the Dutch East Indies depilate themselves so thoroughly that the mons veneris appears quite hairless. But this is not a universal habit among all Malay women, nor have the Chinese women resident in the Malay Peninsula adopted the habit. There are apparently great differences of custom here; for instance, Maass<sup>3</sup> says that among the inhabitants of the Kuantan District in Central Sumatra, depilation was practised in the armpits "so that they should not look untidy," but not on the genitals, and in both sexes. But in another province of the old kingdom of the Menangkabau, namely, in Kampur-Kiri, there is no depilation in either region. While the Battak (also of Sumatra) pluck out or shave the pubic hair in girls as soon as it appears, according to Hagen.

Jacobs<sup>2</sup> mentions the same customs as occasional among the Achinese women, and Roth among the Dyak women of Borneo, who use little pincers for the purpose.

Stratz<sup>4</sup> says that Javanese women generally depilate themselves, though this is sometimes only partial. He adds that he has observed the same custom among Chinese and Japanese women.

Maurel gives these particulars of the Cambodian women: that the mons veneris was "generally shaved; but the women who sought the company of Europeans easily gave up the custom."

The Annamese women depilate themselves carefully, so do most of the Cambodian women, according to Jacobus X., who adds that in Southern China (Canton, etc.) it is practised only among prostitutes.

In various parts and provinces of India the custom prevails. Jagor told M. Bartels that rings of a special shape are used for the purpose, and gave two such rings to the Berlin Museum of Ethnology (Fig. 322). These rings are used solely for depilation and for this purpose they are worn on the thumb. They resemble unusually large signet rings with flat sharp-edged discs set with tiny mirrors, which both show the areas in question and reflect the light. The shaving is done with the sharp edges. The name for these rings is *ârsi*.

Rudolph A. Philippi of Santiago collected data from Chile on this subject for M. Bartels. Apparently depilation is not a universal habit, but is confined to special sections of the population.

There is further corroboration in a letter from Mr. A. Hörll, Professor at the State School of Talca in Chile. He was good enough to supply Bartels with the following information (dated November 18th, 1907):

"During my frequent excursions and wanderings through the territory and settlements of the Chilean Arucanians, I have, so far as I was able to observe, found depilation of the mons to be very frequent, if not general. I have not been able to learn the reason. Apparently, the younger women simply copy their elders in this matter. I was able to see that several girls of about 18 were completely hairless in that region. They simply pluck out the hairs after lying uncovered in the sun for some time."

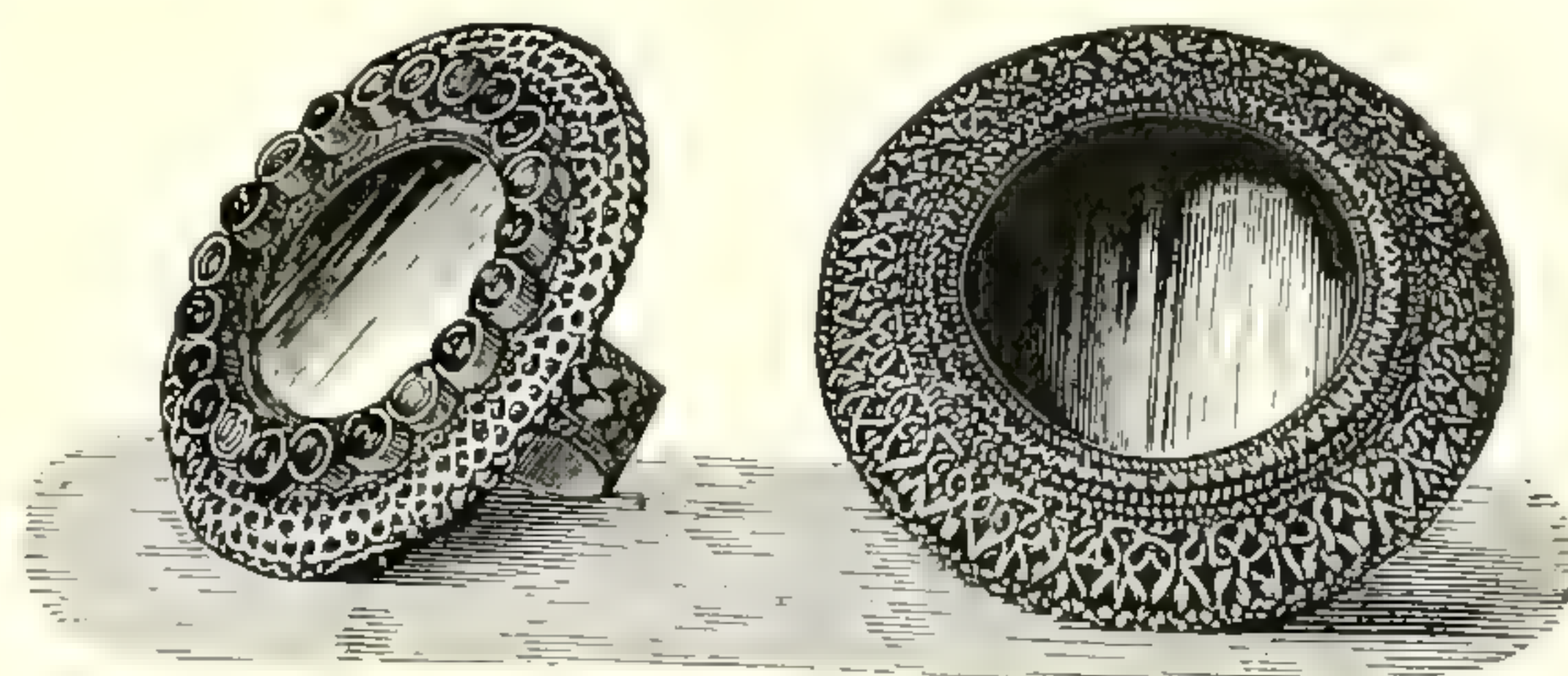


FIG. 322.—Indian thumb-rings with mirror (*ârsi*). (Museum of Ethnology, Berlin.)



K. von den Steinen found complete epilation of the mons customary among South American Indian women at the source of the Shingu, among the Trumai, and other tribes.

Hyades and Deniker mention that one of their Fuegian cases had removed the hair from the mons.

Krämer says depilation of the female pubes and armpits is customary in Samoa.

Although practised by the Moslems of the Near East, depilation was not first invented by them. In the ancient civilisations of Asia and Egypt depilation was common; it spread thence to Greece and Italy. Aristophanes tells us that in Hellas depilation was mainly practised by the hetairæ and the brothel prostitutes; but the custom spread to the women of the ordinary upper class in Athenian homes.

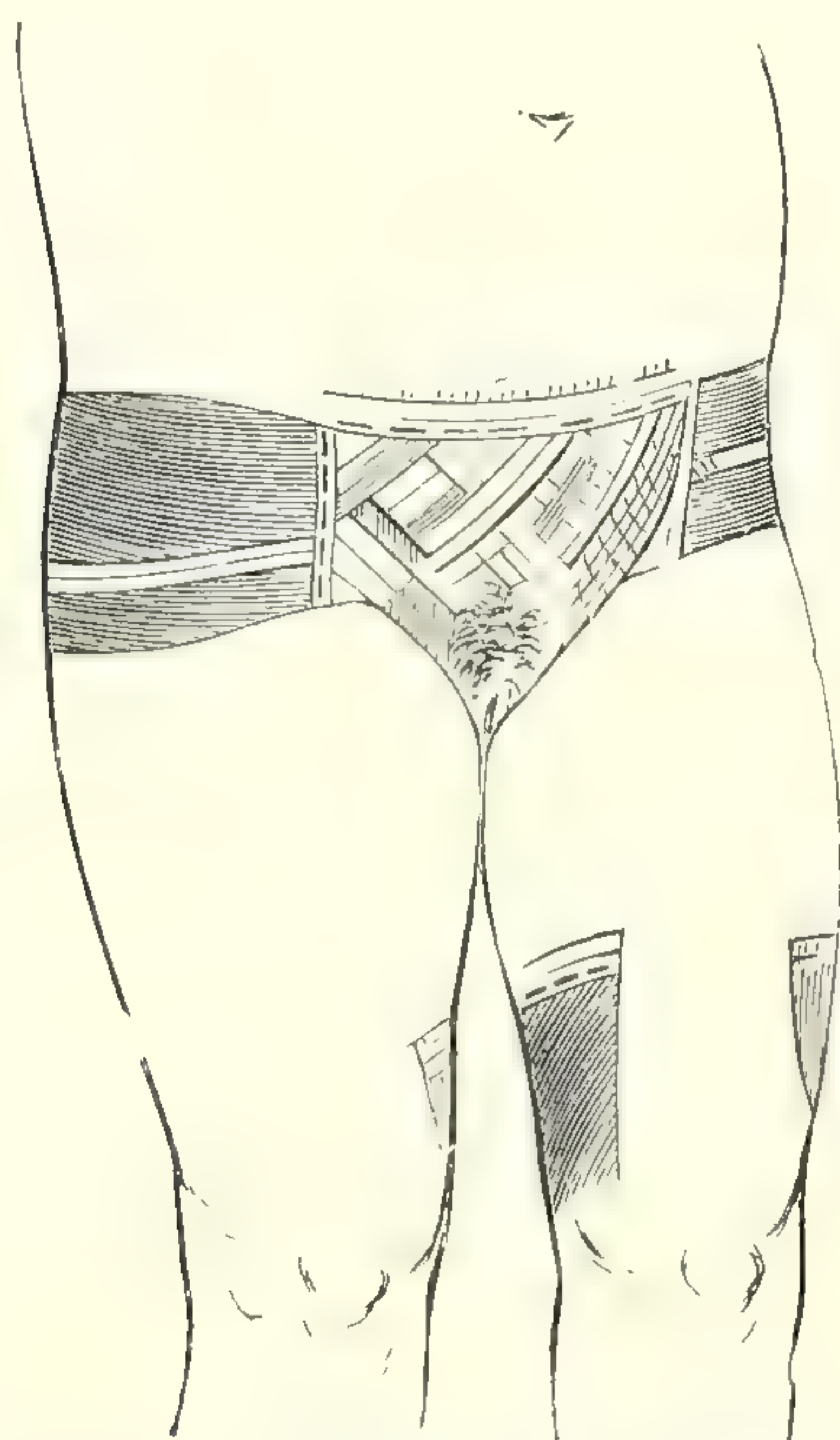


FIG. 323.—Genital tattooing, Ponape.  
(After Finsch.)

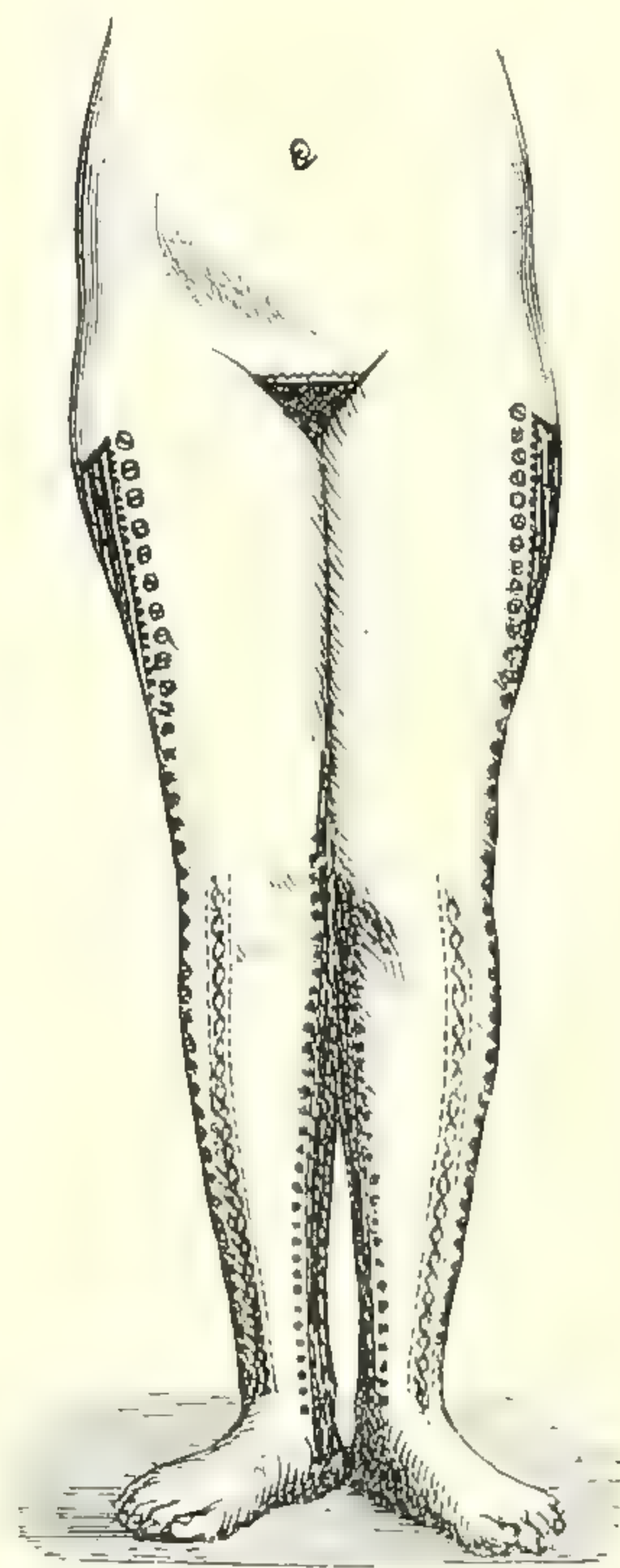


FIG. 324.—Genital tattooing, Pelew Islands.  
(After Kubary.)

In Rome Martial taunted his countrymen with resorting to depilation in order to make themselves appear younger than they were.

Many later writers record the persistence of the habit in Italy, probably for purposes of cleanliness and protection, according to Rosenbaum [who devotes a section to depilation in antiquity].

We may say that, on the whole, the available information tends to show that depilation is generally practised by such peoples and races as are not extremely hairy by nature. Exceptions to this rule are probably ritual in origin, *i.e.*, interwoven with religious or magical concepts.

There are other methods of altering or adorning the genital area. Thus it has been already mentioned that the women of the Bismarck Archipelago dyed both pubic and head hair red.

Finally, we must consider the custom of tattooing the visible portions of the external genitalia. So far as we are aware, this is only done on certain South Sea



Islands. Both the well-known authorities on Pacific anthropology, Finsch and Kubary, have given accounts of the practice.

Finsch<sup>4</sup> writes that he believes genital tattooing to synchronise with, and confirm adolescence in the district round Hood Bay in New Guinea, but is not certain of this association.

On Ponapé (Caroline Islands), the girls are elaborately tattooed, as described by both Finsch and Kubary (Fig. 323). Kubary<sup>3</sup> described the tattooing process as very prolonged: it starts when the girl is between seven and eight years old. At about 12 the hips and lower abdomen are dealt with. "The adornment of the genitalia is so intricate and careful that both the labia majora and the vaginal orifice are tattooed."

Kubary<sup>3</sup> continues in these terms about the Pelew Islanders:

"So soon as the girl has intimate relations with men, she is decorated with the indispensable *telengékel*—tattooing (Fig. 324); otherwise, no man would ever look at her. The *telengékel* consists of a triangle which covers the mons veneris, and is bounded by a straight line (*gréel*). The area within the triangle is then filled out with black paint (*ogúttum*) and the base of the triangle which lies uppermost is finished off with a zigzag line. This line is known as *blasak*."

N. von Miklucho-Maclay<sup>7</sup> also mentions the tattooing of the Pelew women. He says that the mons veneris is filled in with a solid patch of tattooed work; "that is, there are no special designs, geometrical or animal, on it. The mons is not tattooed till the menstrual function has been established: parts of the labia majora appear to be tattooed; at the same time, the genital hair is depilated. Although the process of tattooing the mons veneris is very painful, I am told it is completed in one afternoon."

He adds that the *kariut*, or short kirtle of pandanus fibres is generally put on so as to show the stars tattooed in rows along the thighs.

Kubary<sup>3</sup> states that the women of Núkuóro (Carolines) are less lavishly tattooed than on the Pelew group and Ponape. Their tattooing is limited to the mons veneris, and is merely the traced outline of a triangle, whose internal area is left blank. The two sides are fringed with diagonal lines and the base lies uppermost. Just above the base is a parallel horizontal line with short upturned hooks at either extremity.

"In spite of its sparseness, the tattoo patterns of *Núkuóro* are highly important, for all children born to women who have not been tattooed are put to death. Tattooing is the sign of maturity and membership of the community of women. It is, therefore, performed in company and forms one of the chief items of the Takotona festivities" (cf. Fig. 325).

N. von Miklucho Maclay's<sup>7</sup> observation confirms Kubary's in a striking manner. He said in a letter to Rudolph Virchow:

That in order to inspect their tattoo patterns, he induced several girls to remove their *kariut* simultaneously, and was reminded of what Virchow said of tattooed nudity elsewhere: "Modesty is not in any way offended by the sight." At the first glance, the girls seemed to be wearing triangles of some blue textile over the mons veneris.



FIG. 325.—Genital tattooing, Núkuóro. A sign of sexual maturity. (After Kubary.)



## CHAPTER VII

### THE INNER FEMALE SEXUAL ORGANS IN ETHNOGRAPHY

#### 1. THE KNOWLEDGE OF THE INTERNAL GENITAL STRUCTURE OF WOMAN

AMONG primitive peoples we must not assume any but a very imperfect or rudimentary knowledge of internal anatomy.


Such knowledge as they have in this direction is generally derived from animals they have slain in the chase or in ritual sacrifices. They appear to assume a great resemblance between human and animal anatomy. Thus, even the ancient Greeks and Romans knew very little about the organs of the female pelvis, for they were not in the habit of making post-mortem dissections of the human body. Even the great Hippocrates has given a description of the essential sex organs of women which proves quite clearly that he can never have seen them. He attributes proportions and types of structure common to lower animals to humanity.

Thus the uterus is a single structure in the human species but, in many animal species it is duplex or bicornuate (*Uterus bipartitus*). In the Hippocratic corpus we read of the cavities and horns of the human uterus and the writer remained apparently ignorant of the existence of the ovaries, although an attempt has been made to interpret a phrase in a later Latin version ("*vasa ad uterum plicantur*") as referring to the ovaries and the line of the oviducts curving from them to the womb. Nevertheless, the errors and omissions of further remarks on the special anatomy of woman make it very unlikely that he knew of the ovaries and tubes. Moreover, Aristotle bases his treatment of the subject on animals (*cf. Hist. Anim.*, III., 1). Rufus of Ephesus, who had profited by the researches of Herophilus, speaks of the horns of the uterus. But he distinguishes between the cavity or fundus and the vaginal portion, the cervix and the collum. And he is aware of the existence of the oviducts, although their first observer and discoverer was Philotimos, a contemporary of Aristotle, as Galen informs us. But this knowledge was lost again, and only after centuries were these organs rediscovered (c. 1550) by the Italian anatomist Fallopio; and they are still known as the Fallopian tubes.

It is probable that the ancient Egyptians knew more about the pelvic viscera than the Greeks and Romans, for the practice of mummification favoured anatomical observation. But we know very little of the extent of their knowledge or whether it greatly affected their practice.

Georg Ebers, the Egyptologist, told Hennig<sup>1</sup> the following facts, as recorded on a papyrus in his possession:

In the Egyptian script the word *nätú* (Coptic *oti*), when used as a masculine noun, means the uterus; when used as a feminine noun, the vulva.

And there is a further term for the uterus: "*mut*," which Hennig thinks the radical syllable from which the Greek, Latin and later European terms for mother originated. The ovaries were called *benti* and depicted as two oval lozenges lying one over the other, ; and recipes "against falling of the ovaries" are known.

The Talmud gives many glimpses of the medical and anatomical knowledge acquired by the Jews. Israëls<sup>1</sup> came to the conclusion that the medical authorities



cited in the Talmud must have based their views on much dissection and post-mortem examination.

Kazenelson states :

That all the external and some of the internal portions of the female genital tract were known to the Talmudists and they had a rich and precise vocabulary with which to designate those organs. The mons veneris was termed kaph tappûach ; vulva, érvâh ; rima pudendi, beth hassethârim ; vestibulum vaginæ, beth chison (*i.e.*, the outer room). The urinary orifice, lul (*i.e.*, the stairway, the passage) ; hymen, bethulim ; and ostium vaginæ, beth schinnajim, or "toothed opening" in probable reference to the carunculæ myrtiformes, titule basar. Maimonides takes beth schinnajim as referring to the ostium uteri, while he thought, with Galen, that the cervical canal was always open during coitus. The Talmudists did not share this view. They further distinguished the vagina, beth toreph, beth ha-rechem and, sometimes, together with the vestibule, perozdor, or anteroom to the womb. They called the vesico-vaginal septum, gagh perozdor, "roof of the anteroom," and the vesico-rectal septum, karka perozdor, "floor of the anteroom." Moreover, there were the following further terms for the

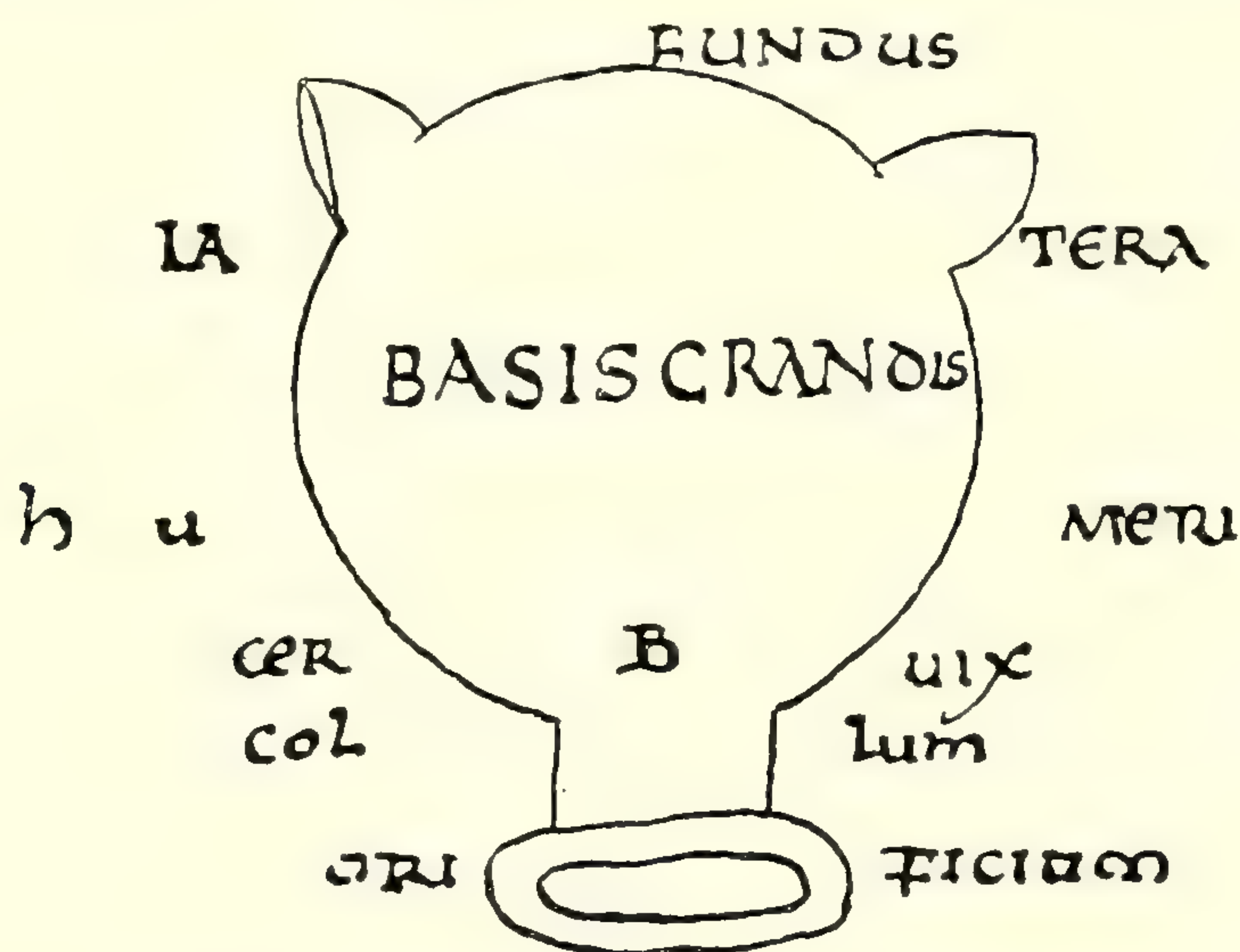


FIG. 326.—Uterus. From the *Brussels Moschion Codex*, ninth century. (After Kossmann.)

uterus : em, mother, tarpachath, cruise, or jar, and schalpuchith, bladder. These are found in the Old Testament as well as the Talmud and exclude the supposition that the uterus was bicornuate. Finally, the Talmudists distinguished the cervical canal, makor (*i.e.*, source) and the uterine cavity, cheder, beth and herajon.

Kazenelson quotes also a passage from the Mishnâh :

"Woman has within her a room, a courtyard and an ascent." But there are no references to ovaries or Fallopian tubes in the Mishnâh. Kazenelson also emphasises the greater accuracy of the Rabbinical School of Medicine as to the structure of the uterus : they did not at all share the erroneous view of Galen.\*

Soranus was the first clearly to distinguish between the uterus [μήτρα] and the vagina [κόλπος γυναικείος] : he owed this knowledge to his observation and

\* It is perhaps relevant to this chapter to mention that the Hebrew Talmud consists of two portions : the Mishnâh which was originally the work of Hillel and his school but was only collected in its present form in the third century A.D., and the Gemara which is much fuller and of three centuries later date. We may add that the Talmud only touches on medical matters when questions of doctrine or ritual arise, and, therefore, it is logical to conclude that more was known of medicine and anatomy than is mentioned therein. (Cf. also the works of Wunderbar, Trusen, Bergel and Kotelmann.)



dissection of corpses. He also explained that the womb in women had a different shape from that of animals : he described the os externum with remarkable accuracy, as also the two membranes of the uterus. He also mentions the spermatic vessel, the small passages of the oviducts, the existence of which he may have recognised, although it seems unlikely. Moschion, who compiled a manual of midwifery in Latin, agreed almost entirely with Soranus and distinguished clearly between uterus and vagina. His book contains all the details known to the medical practitioners of his time as to the sexual organs. Then we find Galen reverting to the idea of the bicornuate uterus, an error perpetuated by Oribasius and the Arabian physician Avicenna, who was born about A.D. 980 in Persia.

[Among these ancient medical authors many terms were used to describe the internal organs as well as the different parts of the vulva.

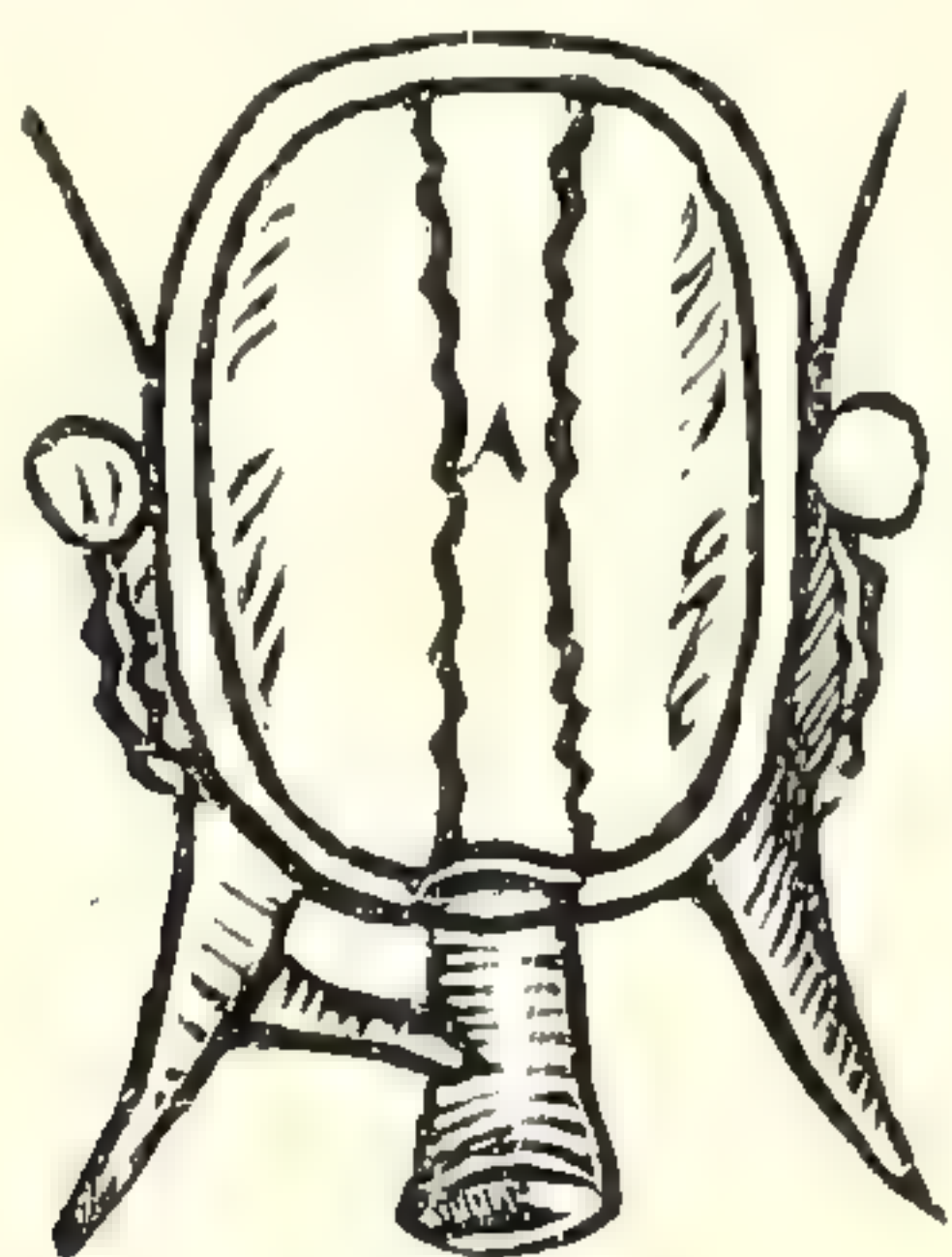


FIG. 327.—The internal female sexual organs. Magnus Hundt, 1501. (After Nicaise.)

Similarly, in classical writers a variety of terms were employed, as indeed is the case throughout the world. The vulva was called *crista*, *sulcus*, *porcus*, *navis* (cf. the slang expression for the clitoris, “the boy in the boat”), *Xoivos*; *Kυσός* : the vagina, *cunnus*, *concha*, *tubus* and *sinus*; whilst terms for the uterus include *alvus*, *bulga*, *fovea*, *νηδύς* and *loci*.

Although gynæcology was not far advanced certain authors showed an appreciation of methods that have persisted. The utility of the dorsal position was recognised and specula were employed very early. Sounds were used for a variety of conditions and both pessary and suppository were known to the Egyptians and recommended by Hippocrates.

McKay states that, according to the Jerusalem Talmud, the hymen was recognised, which, if we can judge from the writings of Soranus, was unknown to the Greeks. It also appears that gonorrhœa played an important part in the ætiology of the diseases of women.]

Many years later, in the fourteenth century, the surgeon who attended Philippe le Bel, King of France, Maître Henri de Mondeville, described the uterus as placed

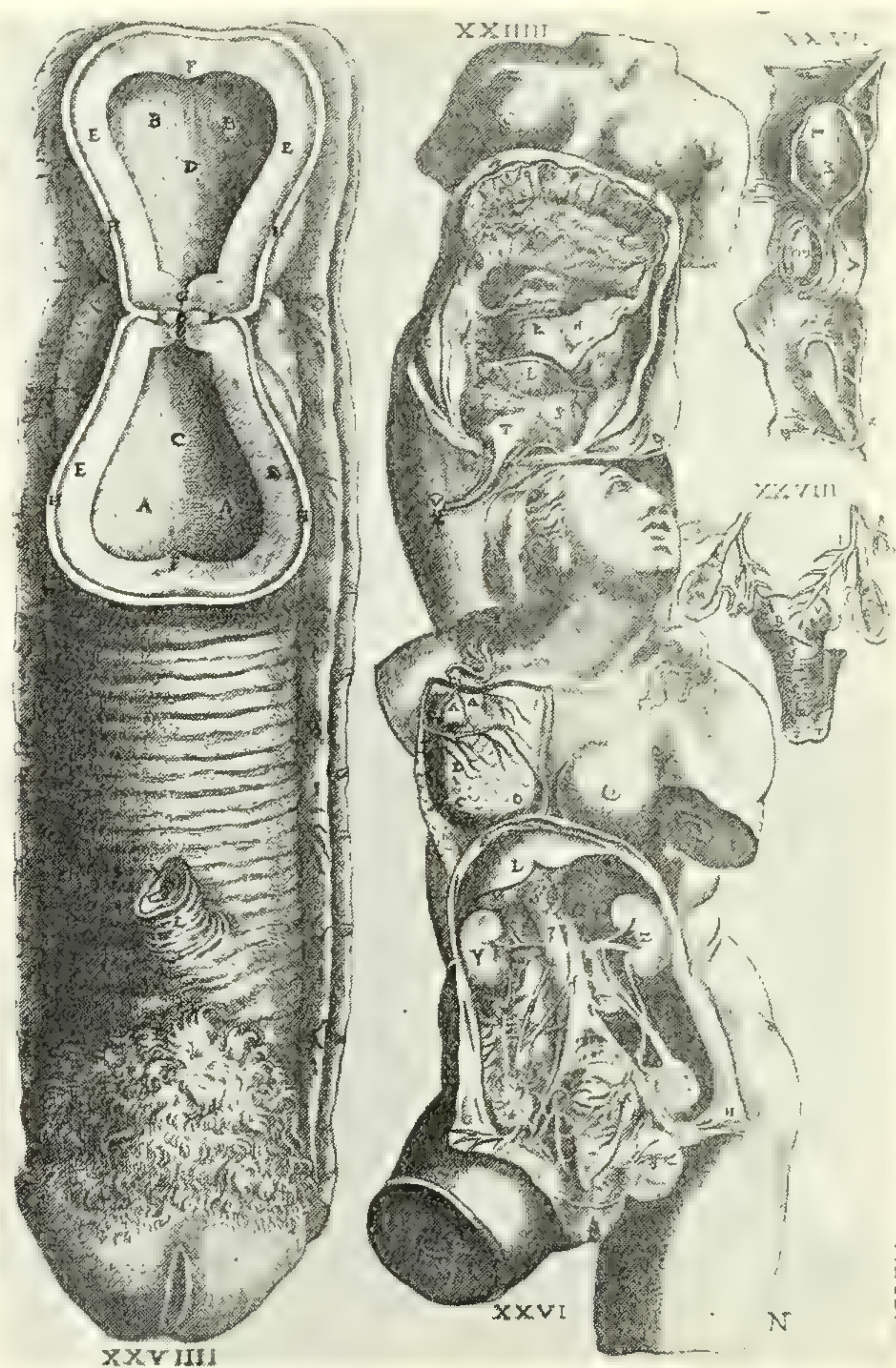


FIG. 328.—The female sexual organs. (After Vesalius and Valverde.)



between rectum, bladder and other parts in order to protect and conceal the embryo. He compared the womb to the scrotum and the neck of the uterus to the male organ.

The extremely fragmentary knowledge of genital anatomy about 1501 is shown by a diagram supposed to represent the female organs ; it appeared in a treatise by Magnus Hundt, and is reproduced here (Fig. 327).

By 1547 an advance was made and recorded in J. Dryander's illustration (Fig. 329), and especially in the work of Andreas Vesalius (Fig. 328), although there are errors and omissions. The woman, as represented in Fig. 328 (right) gives a fairly good general idea of the parts. Fallopio's discovery of the oviducts was of great importance, and these tubes were named after him.

The accepted scientific terminology for the genitalia is a very recent invention. We may, however, briefly refer to various linguistic terms which have been employed in this connection.

Höfler<sup>3</sup> has dealt with the terms used by the Teutonic people in general. Their terminology, like their anatomical knowledge, was neither exact nor detailed. The term for the external genitalia and the womb and abdomen indiscriminately was *Kütte*, *Kvithu* or *qithi* ; the Gothic *qitbus* (E. cognate *wife* ?) The uterus was also sometimes termed *bære*. There was no knowledge of the existence of oviducts or ovaries.

The Letts, according to Alksnis, have also their own terminology. The uterus is termed *mahte* (mother) and *dsemde*, and also the compound *dsemdes mahte*, also "mother of blossoms," but equally "Mother of wrath," "of fear" and "of pain." In magic formularies addressed to her, she is called "Little Golden Mother," "Mahrina," "Lady Mother," "Holy Mother," "Mother of Fruits," "Mother of Life," and then sometimes very dis-

respectfully, "black sow with young." The uterus "sits in a secret place on the left of the body under the navel" ; this is her little house, her room, she sits enthroned on a golden throne, in a bed of down or blossom petals, and she should repose folded up like a skein or curled round like a kitten, all warm and gentle, soft as a flake of pure wool or as lime blossoms. Her throne is gold with silver arms. She is sweet as honey, white and rounded and within her is blood.

We learn very little, even from the *Susruta Samhita*, of the extent of knowledge in ancient India with regard to the internal sexual organs, though there were prescriptions and suggestions for bringing about conception when it tarried. The term *yoni* apparently referred indiscriminately to all the female organs concerned with coitus, conception, gestation and birth.

In the *Kāmasūtra* and the *Kāma-Shastra* there are attempts at classifying both sexes into categories according to certain genital measurements. The three groups of women are termed gazelles, mares and elephants respectively ; the measurements being six, nine and twelve times the thickness of the thumb ; and the corresponding male groups are termed hares, bulls and stallions.

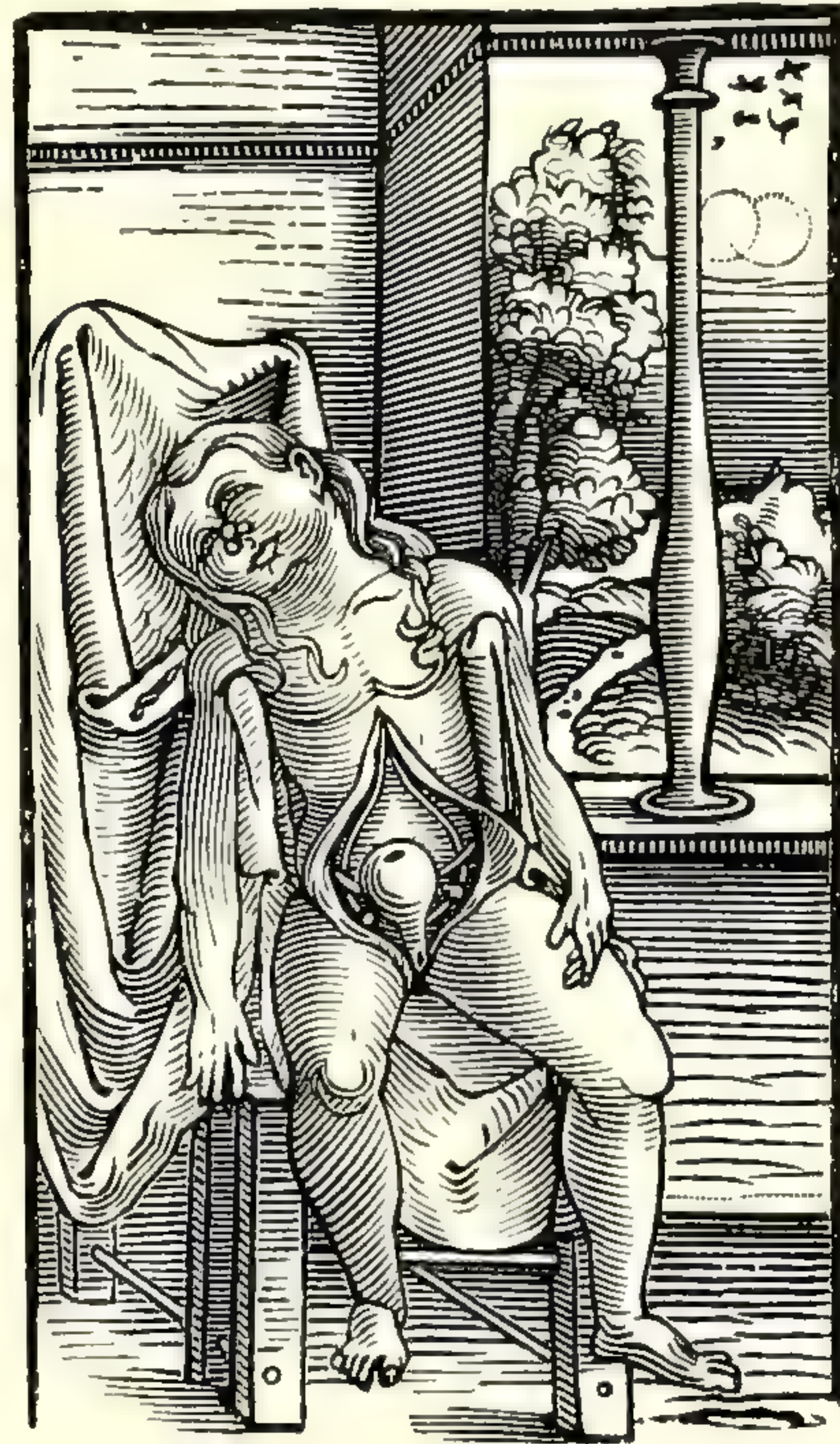


FIG. 329.—The internal female sexual organs. (J. Dryander, 1547.)



The state of obstetric knowledge in Japan, even as late as 1750–1765, when the great physician Kangawa wrote his famous treatise *Sanron*, was very imperfect.

However, they had some idea of the bony structure of the pelvis and the different proportions of the pubic bone and pelvic floor in men and women respectively; and they gave measurements of the vulvo-anal region in nulliparæ and in cases of one birth. They also realised the angle of the portio vaginalis and cervix and the position of the uterus as regards the sacral bone. In the second half of the nineteenth century, moreover, medical knowledge and practice were revolutionised in Japan. They became indefatigable partakers in scientific research and resources and have contributed in a remarkable way to international scientific investigations.

Previous to the latest revolutionary era in China, the knowledge and practice of medicine were very primitive (*cf.* Wong). Among all the ancient medical treatises of the Chinese, some of which are richly and elaborately illustrated, we have hitherto failed to find a representation of the pelvis, although pelvic bones are of such immense significance in the process of birth.

But from certain writings of an obstetric nature, we may deduce that they realised the difference between vaginal passage and uterus, and did not regard the latter as simply a continuation inwards of the former. “The uterus sits therein, even as a water-lily blossom set on her stalk.” But there is no mention of oviducts or ovaries, nor any indication that their important functions were known.

## 2. THE UTERUS IN ANTHROPOLOGY

We are, as yet, unable to say whether there are really ethnical or racial—as distinct from individual—differences in the structure of the internal genital tract in women. We will summarise a selection of the scanty information at present available.

Pruner-Bey remarked on the thickness and elongation of the cervix uteri in negresses. According to de Rochebrune, the cervix in Wolof women is pear-shaped, extremely narrow and characterised by its length and by the forward angle of the ostium externum; characteristics which would be considered indicative of early prolapse in women of Europe. De Rochebrune believes this structure to be a racial characteristic. It may equally well be the result of climate, diet, habits of life and vehement exertion in the dance. He gives the following average cervical measurements:

In European women	.	.	0·017 m. long, 0·031 m. in diameter.
In Wolof women	.	.	0·044 m. long, 0·019 m. in diameter.

The same anatomical peculiarity is reported among Creole women and half-castes. St. Vel reports that a simple hypertrophy or elongation of the cervix has been observed among the older women of the Antilles; these women belonged to the most various classes of the community, but, after several confinements, had been overstrained.

The ethnical character of the structure of the uterus found by Görtz in the Bushwoman, on whom he performed an autopsy, is equally uncertain. This woman died at about 38 years of age, and had been a mother, it was said, of three children. The autopsy showed a uterus somewhat less elongated than usual. The fundus was convex, the lateral surfaces strongly arched, the vaginal portion short and cylindrical with an exterior orifice wide enough to admit a goose quill. The lips



of the os externum were thick, but neither ridged nor scarred, and their dimensions were not larger than those in a youthful European.

Lübbert writes of the native women in South-West Africa that the uterus and uterine adnexa presented no racial peculiarities. The only characteristic he noticed was pronounced retroflexion of the uterus, and he suggests that this may have been connected with their frequent dysmenorrhea.

Groyssmann reports in a post-mortem on a Herero girl who had already cut 12 milk teeth :

The uterus was 26 mm. long and consisted mainly of cervix, the fundus being shorter and narrower : measurements—cervix, 17 mm. long by 13–14 wide ; fundus, 9 mm. long and 9 wide. The relative length of the portio vaginalis was striking (7 mm.), and the lips of the os externum were not rounded but dentated, especially the posterior lip (five to six notches), whereas the anterior had only two or three. The os was an open slit.

The ovarian measurements were 18 mm. on both sides, but the right ovary was only 6 mm. in diameter, the left 7 mm. The only particulars given about the external organs are relative to the labia minora, which were greyish black.

In the French expedition to Cape Horn, from whose report we have already often quoted, Hyades and Deniker obtained some further material.

They say of the uterus of a Fuegian of 13 years :

“ Firm neck of cervix set low and forward ” ; in a 16-year old, “ normal cervix uteri ” ; in an 18-year old woman, “ low set cervix, slightly forward rounded lips ” ; finally, a woman of 20 had a “ prolapsed cervix, twisted slightly to the right and containing a straw tampon, which wholly blocked it.” The last mentioned woman was about three months pregnant. In a woman of 30, mother of two children, they found : “ a wide cervix with horizontal slit sloping somewhat downwards and inwards, a straw was round it. Another woman of the same age had a cervix which was low set and slightly tilted forwards, of firm texture and oblique orifice with slight traces of notches at each side. She had also a slight vaginal prolapse. Finally, a woman of 40 showed the following symptoms : cervix set low and rather forward, rather firm with rounded lips, she had borne three children.”

Bischoff made a post-mortem on a Fuegian girl who died of pleurisy in Europe. He says in his report :

“ The portio vaginalis of the uterus is only visible against the vaginal vault (fornix) in its posterior fold or lip : the anterior lip is obliterated. The os externum is a slit 12 mm. long and rather wide open, but with neither lacerations nor scars, so the woman cannot have given birth to any child at full term. The greatest length of the uterus is 8 cm., its breadth  $5\frac{1}{2}$  cm., and its thickness (anteroposterior) 3 cm. It is somewhat flat and situated a little to one side. The ovaries and oviducts are normal in formation, but there are some membranous adhesions around the former. The constrictor cunni muscle is weak, the bulbus vestibuli of normal development.”

R. Martin made a post-mortem on an older Fuegian woman of about 40 years of age. His report states that the

Uterus is 7.5 cm. long and 2.5 cm. thick ; somewhat flattened, but on the whole like that of a white woman. On opening, it was noted that the muscular wall in the fundus is almost as thick as in the anterior and posterior surfaces. Hennig (*Arch. für Anthropologie*, Vol. XVI., p. 214) lays great stress on this circumstance, for the uterine muscle of the fundus is meant to “ bear down ” or expel the child in labour, and he wishes to attribute to this powerful development the easier and quicker childbirth of these women compared to our European urban population. The portio vaginalis is hardly prominent and has a smooth surface ; the lips of the os externum merge almost into the fornix.



Unfortunately, the available material is much too sparse to afford ground for any conclusions here. It would, however, appear unlikely that there are ethnical differences of appreciable degree in this respect.

### 3. THE UTERUS IN FOLKLORE

Though both primitive peoples and those of classical antiquity had very little exact knowledge of the uterus, they dwelt much on its purpose and function in their legends and folklore.

The Hindus mentioned the womb and the breasts as the three *asaya* or receptacles which distinguish woman's body from man's (*cf.* Wise). Of women who were barren the Old Testament says that their wombs were "shut up." The same idea and expression prevail among the Arabs, according to Bertherand.

For many hundreds of years even the learned regarded the uterus as an independent organism, a kind of animal enclosed in the woman's body. Even Plato could not free himself from this idea. He considered the uterus a creature that desired fertilisation. If this did not occur, the uterus became restless and wandered in the body, checking the motions of the body and causing heavy anxiety, feelings of dread, and many illnesses.

This reminds us of the Proverbs of Solomon the King, in which the grave and the barren womb are compared as equally insatiable.

The same view was expressed in later Greek times. Aretæus says :

"Midway between the two flanks in woman, there lies the uterus, a part special to females and resembling an animal, for it moves to and fro within the body. The uterus delights in pleasant odours and moves towards them and shrinks from the foul and evil odours. In this also it resembles an animal : in fact it is one."

The corresponding method of treating faintness and hysterical seizures was by fumigation, either of burnt feathers or perfumes.

In the Hippocratic collection is found a very extensive notion of the powers of the uterus. We read : "If the womb leaves its proper place it falls here or there, but, wherever it may fall, severe pains manifest themselves."

This is considered a frequent occurrence, for if the uterus is in any way ailing, it may leave its proper place, and it might even wander so far afield as to invade the liver, ribs or brain. It deals very fully with all possible symptoms and suggests methods of treatment in great detail. The main therapies were fumigations and internal injections and applications of vegetable drugs.

Galen rejected the theory of the peripatetic uterus but kept to the Hippocratic prescriptions. Soranus strongly opposed the view of the independent animal nature of this organ.

Throughout Central Europe and in the Austrian Alps, folklore has always given much thought and care to the special feminine organs. All the various protean manifestations of hysteria were attributed to disorders of the womb. According to Fossel, the Styrian peasants call the globus hystericus "Hebmutter"—("womb lift") to this day. And the ancient belief in the wild creature, incalculable and invisible, ranging throughout the woman's body, striking, struggling and biting, also survives.

Among the North German peasants, according to Andree,<sup>5</sup> in the Province of Brunswick, the new-born baby may not lie beside its mother for the first 24 hours as, otherwise, the womb would scratch the woman's side "like a great mouse with



claws " to get the child back again. The inhabitants of the Ennstal, near Admont, have a saying : " If the ' Mother ' is out of her house, nothing will help but to feed the ' Mother,' " obviously referring to supposed uterine wanderings.

According to Fossel, in Styria the uterus is " fed " with concoctions such as the following : cats' grease, ammonia, honey, nutmeg and wild mint, put together in a nutshell, in a circle of wax tapers and stood on a waxen disc, tapers and all, on the woman's body, just over the navel. The tapers are then lighted, the " Muata " creeps back to her place and the sick woman recovers.

In Rosalie's " *Freiwillig aufgesprungenen Granatapfel* " (1790), there is a passage which gives directions for a mixture of various ingredients which, when thrust up the vagina will catch the wandering uterus.

A very similar procedure is usual among the peasants of Lower Bavaria, according to Panzer.

The mediæval miracle plays often refer to these incantations and to the waxen votive figures accompanying thanksgiving after recovery. These curious objects are shaped somewhat like toads or tortoises ; they have flat-tish bodies and four short outstretched limbs. A short socket or pedestal is attached to their hindquarters, for they were meant to stand upright ; and they are also often provided with silken strings or ribbons round the neck, to suspend them before the altar. The socket or pedestal must have been used in the waxen images in imitation of the older metal ones, where it was cast in one with the body of the creature.

An iron votive image of this kind is shown in Fig. 330, of which the original is in the Germanic Museum at Nuremberg, and a further example is from the Museum at Wiesbaden. R. Andree<sup>6</sup> states, moreover, that men often made votive offerings of the same shape.

Handelmann mentions that, according to popular superstition the wandering womb creature crawled in and out of the woman's mouth in the shape of a toad during sleep. It went to water and drank or bathed itself. But, if the woman had shut her mouth, it could not return and she bore no children.

These superstitions are recounted by H. von Deventer,\* in a popular manual of midwifery, written at the beginning of the eighteenth century.

It is not altogether clear why this toad-like form should have been chosen to

\* [Although Deventer describes the movements of the uterus I am not satisfied that these can be compared with the superstitions mentioned in the text.]



FIG. 330.—Iron votive image. (Germanic Museum, Nuremberg.)



represent the womb. Thilenius<sup>1</sup> is of the opinion that frogs, skinned and prepared for the table, may have reminded our ancestors of the bicornuate uteri of deer, sheep and cattle. But, for the present, we can only record the superstition without explaining it (see Höfler<sup>8</sup>).

But North German and Scandinavian folklore describe mice, sometimes white, sometimes bright red, as creeping out and back to the body through the open mouth: if they are killed or caught, the sleeping body does not awaken. R. Andree<sup>6</sup> considers that the toad motif extends from Carinthia and Styria in the south, through the German Alps (excepting South Tyrol), Bavaria and Swabia to Alsace, but in Italy this cannot be traced, as he admits.

Riedel<sup>1</sup> says that in the Ceram Islands the uterus is considered a wholly independent organism living in the woman's body but not a part of it. But—they add that, unless the woman is to fall sick and her body not to develop normally, the uterus must be continually fed with sperm.

In Transylvania incantations are addressed by Saxons to the womb, for instance: "Mother of Woe, Bearer, Thou wilt lick blood, thou wilt rend the heart, stretch the limbs, tear the skin! Nay, not so, thou must not thus. Thou shalt rest in God's name" (H. v. Wlislöcki<sup>4</sup>).

There is a very similar incantation recorded from near Kraupischken in East Prussia, by Frischbier. An anonymous collection of magic spells and charms called "Die 90 Geheimnisse" has a list of adjurations and invocations. The organ is addressed as: "Heave-Mother, Woe-Mother, Swell-Mother, Bear-Mother, Moving-Mother, Garden-Mother, Rose-Mother, Child's Mother, Falling-Mother, I command thee that thou return to thy former state and place where thou didst lie and lament when thou wast a maiden."

A Transylvanian rhyming spell—also supplied by H. v. Wlislöcki—from Urwegen, treats the womb as something not only independent of, but external to, the woman's body and as something malign and hostile, seeking to "behold her blood, devour her heart, take her life." The incantation forbids this: "Thou shalt not do that! Thou shalt rest enclosed in marble stone; the wood lady shall eat thee as though thou wert not! In the name of the Father, Son and Holy Ghost."

The Letts, according to Alksnis, have a series of rhyming incantations forbidding all possible imaginary wanderings of the uterus, and in one commanding it to return home and "roll itself together again."

In one of these it is mentioned that "the little babies are crying for their mother," i.e., the womb, which wanders abroad into the meadows, and is adjured to return to "where Blessed Mary hath placed thee."

Or, again, "Mother, mother, what you have a mind to do, do not do. You want to climb the high mountains, but do not do it! You want to go visiting, but do not do it! Come, come, sit down on your golden chair and sleep in your golden bed where God has placed you. In the Name," etc. (An account of the various German superstitions concerning the uterus will be found in the *Handwörterbuch z. deut. Volkskunde*, Abt. I., Bd. III., 338 ff.)

The ancient Egyptians also believed that the uterus was able to leave its normal position of the womb. In Eber's papyrus, mention is made of healing medicines "in order to bring back the mother of all men in a woman, to her own place."

In Eckarth's book on midwifery, which was published at the beginning of the eighteenth century, he compares the womb to a bear that being angry, tears and rends and bites all to pieces, which is what the "mother" also does, for what pain



and trouble the poor women are plagued with if the "mother" rises up and bites and rends their bodies within.

The Greeks and the Romans suspended votive images of the afflicted and healed organs of their bodies in the temples of the gods to whom they attributed recovery. The dredging operations in the Tiber in 1890 brought the cella of the temple of Æsculapius to light and many clay figures of this kind. Among them were terra-cotta representations of the female organs. Neugebauer has described one such (now in the Neapolitan Museo Nazionale) which he believes to represent a case of prolapse of a uterus which is shown as covered by the folds of the vaginal mucous membrane.

Stieda recently devoted a monograph to the subject, and thinks the Neugebauer

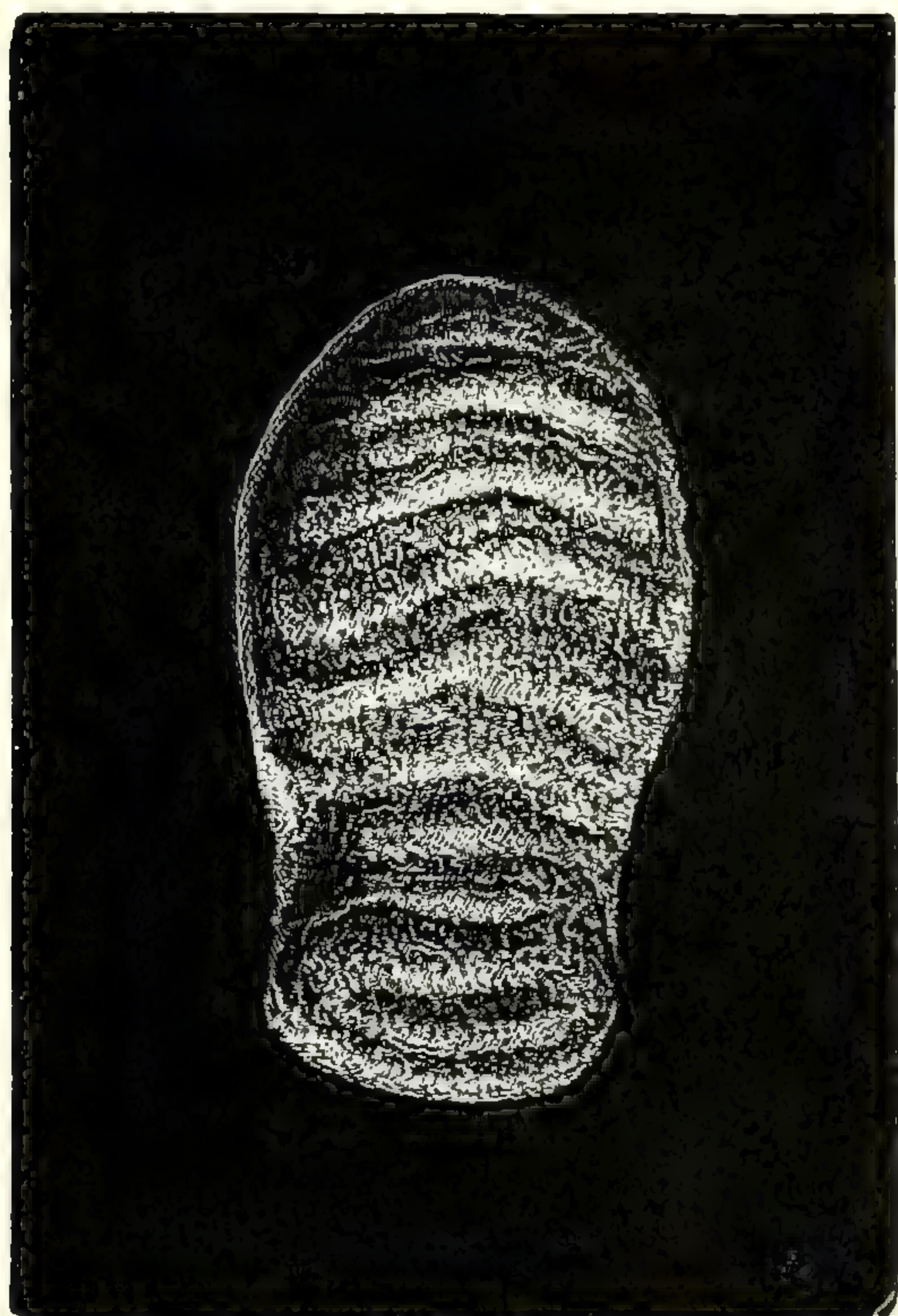


FIG. 331.—Votive offering in the shape of a uterus. Terra-cotta from Veji.

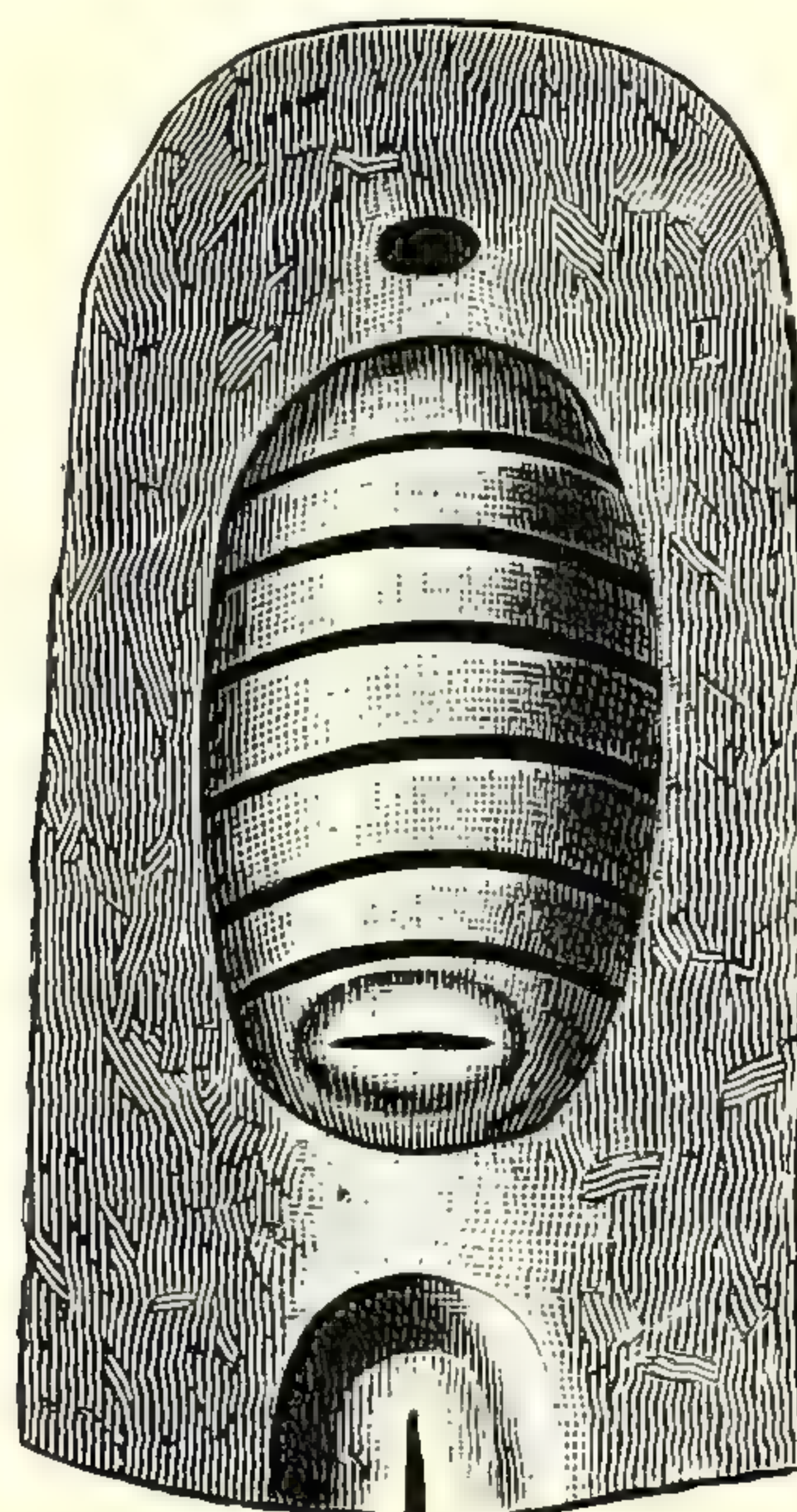


FIG. 332.—Votive offering in the shape of a uterus. Terra-cotta in Museo Archeologico, Florence. (From a drawing by M. Bartels.)

specimen is meant to represent, not the uterus but the vagina. One of these terra-cotta figures is reproduced in Fig. 331, and Stieda is of the opinion that the slit at its base represents the vaginal orifice. The Museo Nazionale in Rome has 102 such votive offerings. Some have a small oval appendage, sometimes on the left, sometimes on the right, which Stieda takes to represent the bladder.

The Florentine Museo Archeologico is also rich in these votive genitalia in paler pink terra-cotta. One is at least 2 ft. in height and displays the vulva, the navel and, between them, in a shallow, oval depression, the ridged uterus with portio vaginalis and os externum (Fig. No. 332).

Stieda thinks this represents the vagina because of the ridges. But M. Bartels disputes this view, believing that the potter who made the terra-cotta image must have been aware of the rugæ or crinkles of the vaginal walls and thought the uterus



had the same characteristics. Moreover, the horizontal orifice could hardly be the vulva, and even assuming that it might be meant as such, no purpose would be served by representing this part twice.

About the year 1910 certain curious votive offerings dedicated by the devout in churches and chapels in the Southern Tyrol became known and discussed. They are spheres or eggs (round or oval lumps) of wood surrounded with long, pointed prongs or rays of wood in all directions. Marie Andrée-Eysn presented one to the Berlin Museum of Costume and Domestic Decoration. It came from St. Gertrud's,

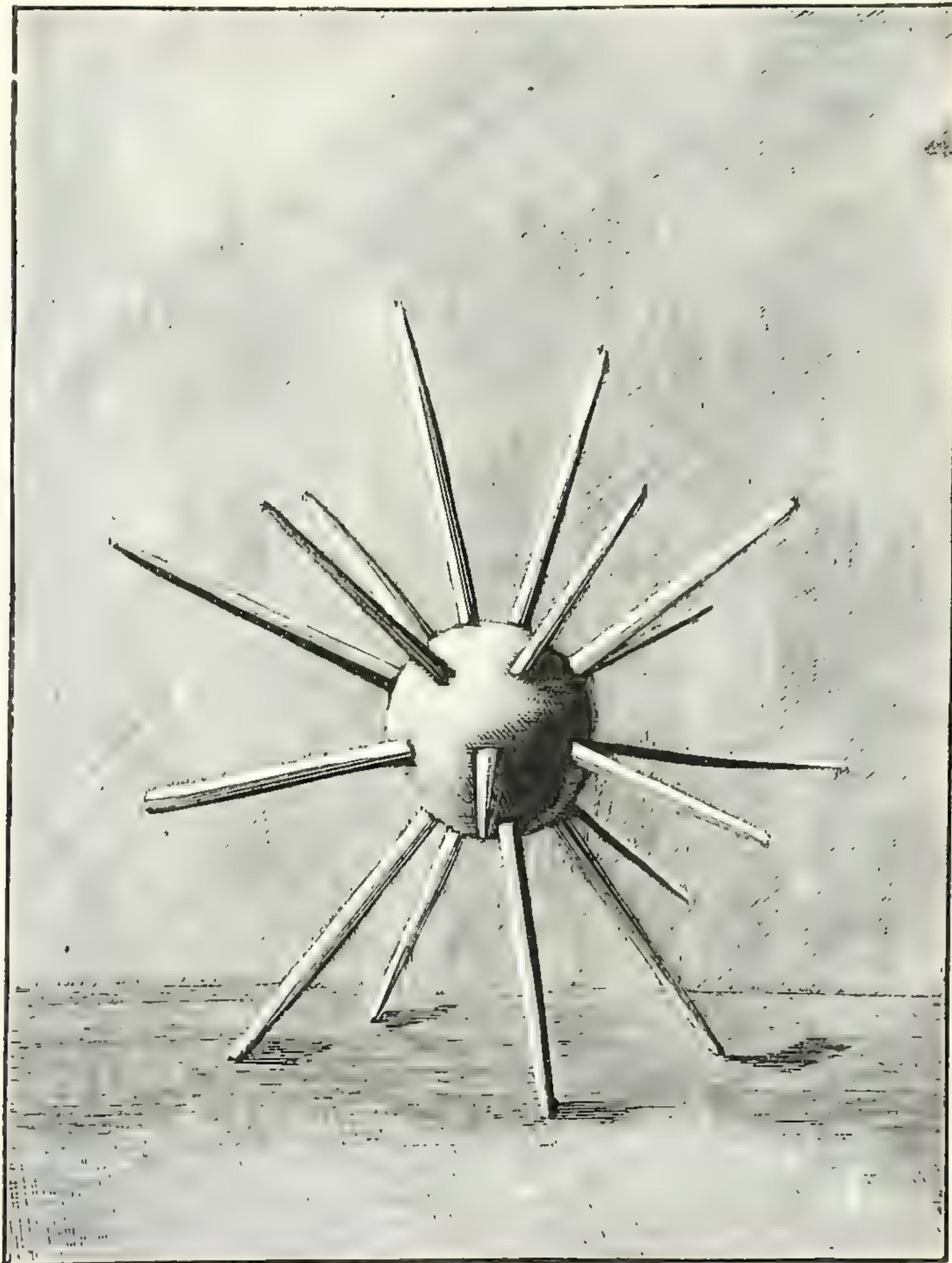


FIG. 333.—Votive offering. St. Gertrud, S. Tyrol. (Samml. f. deut. Volkskunde, Berlin.)

at the foot of the Ortler peak ; a photograph was taken by M. Bartels, and it is reproduced in Fig. 333. Weinhold dealt with it before a Verein für Volkskunde, and Hein<sup>2</sup> has also depicted some similar objects. They are called *Bärmutter* = "Womb."

According to R. Andree, Hoefler considers these objects are chestnut-burrs or, in popular language, hedgehogs, and represent a portion of the uterus or irregularly shaped placenta of a cow. Thus the particular affliction to which they refer may possibly be prolapsus uteri.

Those primitive or civilised races who have recourse to manipulative surgery and massage in order to "cure" uterine ailments, or to alter the position of the uterus in the pelvis (in order to prevent impregnation), have a genuine understanding



of the local anatomy. Some even undertake Cæsarean section, as we shall show later.

#### 4. THE OVARIES AND THE CASTRATION OF WOMEN

The significance of the ovaries as the organs supplying the female germs of life must, in some measure, have become known and recognised at an early date.

Both Strabo and Alexander ab Alexandro make statements from which we conclude that both the ancient Lydians and the Egyptians removed the ovaries by surgical operations. But we may well doubt whether these races practised genuine excision of the ovaries, or only of the clitoris. [The story of how Andramis, king of the Lydians, "castrated" women, has for long excited the curiosity of commentators, but no conclusion can be reached with the facts that are available. The operation may have been a form of excision or of infibulation. Some commentators incline to the first and some to the second. What may be meant is an operation of some sort on the vulva which prevented or hindered sexual intercourse. Those who wish to pursue the matter further can consult the works of Athenaeus, lib. XII., J. Brodaeus, Schweighaeuser, Xanthus, etc.] Nevertheless, the more radical operation has been known and practised for centuries on domestic animals, especially swine, and thus a certain empirical knowledge and skill might develop.

Hyrtl<sup>1</sup> relates a case, vouched for by Wierus, according to which a pork butcher who suspected his daughter of intercourse with strange men, "extirpated both her ovaries, and another fellow of the same trade persuaded his wife to let him perform the same operation on her, lest she bear him more children, for her fecundity had already been so great that he knew not how to maintain them."

The natives of India must also have some such anatomical knowledge and surgical skill. For Roberts is witness that he met women whose ovaries had been removed, when on a journey from Delhi to Bombay. They were about 25 years old. He was unable to discover how the ablation had been accomplished, but he reported that these women had neither bosom nor nipples (*i.e.*, nipples of female type), nor pubic hair. Their vaginal introitus, according to Roberts, was completely closed (?) and the symphysis pubis so narrow that not only the ischio-pubic rami but the iliac bones almost touched on either side. There was no fatty deposit over the external genitals and the gluteal region was as flat and narrow as in men, while the other bodily regions were quite plump. The menstrual periods did not occur, nor were there any hæmorrhages of a similar type. There was no manifestation of the sexual impulse. In fact, these mutilated women proved the interdependence and interaction of ovarian secretions and functional femininity.

N. v. Miklucho Maclay<sup>3</sup> discusses mutilations among the Australian aborigines, who display considerable ingenuity and barbarity in their execution. It is also reported that the aborigines remove the ovaries in certain girls in order to supply the youth of their tribes with a special kind of promiscuous companions who can never become mothers. One traveller reports a case from the shore of Lake Parapi-Ichuri. The girl had a boyish look and build, and long scars above her groins. The naturalist, MacGillivray, saw a native woman near Cape York with scars which proved the extirpation of her ovaries. This had been done because she was dumb, and the tribesmen wished to prevent the birth of dumb children.\*

Purcell has given a brief account of certain customs among the natives of

\* [I have not been able to verify these statements.]



Central Australia under the title of "Eurilthas." He wrote a communication to the Berlin Anthropological Society which may be summarised as follows :

"Eurilthas" is the operation on women which has been thought to be identical with spaying, but the women I saw had no scars on their sides. They suffered a more horrible mutilation, though only very few tribes of the interior still perform this.

The account of this operation is, however, far from clear. Purcell states that a girl of 10 or 12 is chosen and the old men then push a roll of emu-feathers into the vagina and the uterus. It is left there for a few days and then pulled out, together with "what portion of the womb they have got hold of." After three weeks "they cut the neck of the womb vertically and horizontally," and duck or eaglehawk down is pushed in "to keep the womb open." The wound is kept greased with hot fat ; and when it is healed the vagina is slit across the perineum as far as the anal margin. After the operation the women are called Eurilthas. When only half the vagina is slit they are called Woridoh Windees.

Purcell had no doubt of the purpose of the operation. It was meant to prevent child-bearing to men of other tribes and the over-burdening with children in times of drought and on the march.

But several questions arise. The procedure described by Purcell is, in some ways, reminiscent of modern vaginal laparotomy. But it is impossible to decide whether incisions are made in the portio vaginalis or whether part of the womb is actually removed ! These operations, *in principle*, are consonant with our European gynæcology.

Goldie has mentioned an operation which is performed by Australian aborigines and seems identical with Purcell's. Goldie says (I quote verbatim) :

"But the most repulsive procedure is the horrible operation of atna-ariltha-kuma (*atna* = *vulva*, *kuma* = *to cut*), performed soon after the onset of menstruation. In this initiatory or marriage rite, the hymen and perineum are rudely lacerated with a wooden instrument or stone knife" (p. 90).

The resemblance between "*ariltha*" (Goldie) and "*Eurilthas*" (Purcell) is very close. But the facts are not clear. Two operations are in question : a rough and brutal laceration of the external genitalia, and the much more complicated mutilation described in such detail by Purcell. Perhaps the latter fell a victim to a misunderstanding of the accounts given by his native informants. [From what is known there seems little doubt that the account by Purcell is not accurate. W. E. Roth, in his "Ethnological Studies," has given a long account (pp. 174 ff.) of the operation which consists essentially of enlarging and tearing the vagina in a posterior direction. Spencer and Gillen have described it among the northern tribes of Central Australia (*cf.* pp. 133 ff.) where it is called *atna-ariltha-kuma*, and the same authors have described it in their "Native Tribes of Central Australia" (pp. 92 ff., 263, 269). More recently the late Dr. H. Basedow has discussed the problem and has come to the conclusion that the female mutilation was instituted for the convenience of the male.] At any rate, the interest of this apparently unique custom is so great in more than one aspect that greater accuracy is very desirable if this is yet possible.

At the beginning of the eighteenth century a small religious sect carried on extraordinary propaganda under the leadership of Eva von Buttlar in Sassmannshausen on the Sayn Wittgenstein estate. All their public worship concluded with



general intercourse and, therefore, they took the precaution of endeavouring beforehand, to sterilise their female members through a “ painful and often fatal operation consisting in crushing the ovaries.” But these drastic methods did not always have the desired result, according to Christiany. [The foundress, together with some of her followers, was arrested about 1705, but escaped, and although she was arrested again in 1706 little appears to have been done, since her remaining years are shrouded in obscurity.]



## CHAPTER VIII

### THE FEMALE BREAST

#### 1. THE RACIAL DIFFERENCE IN THE BREAST

IN this section of our treatise we have to inquire what are the precise differences, if any, in the structure and appearance of the breasts in various races and ethnic stocks.

The female breasts,\* or mammary glands (*mammæ*) in adults, are situated on the thorax between the third and the seventh rib; they are both sheathed and interwoven with adipose tissue, and it is this fat which largely determines their shape. The single glandular folds or lobes are traversed by strands of dense connec-

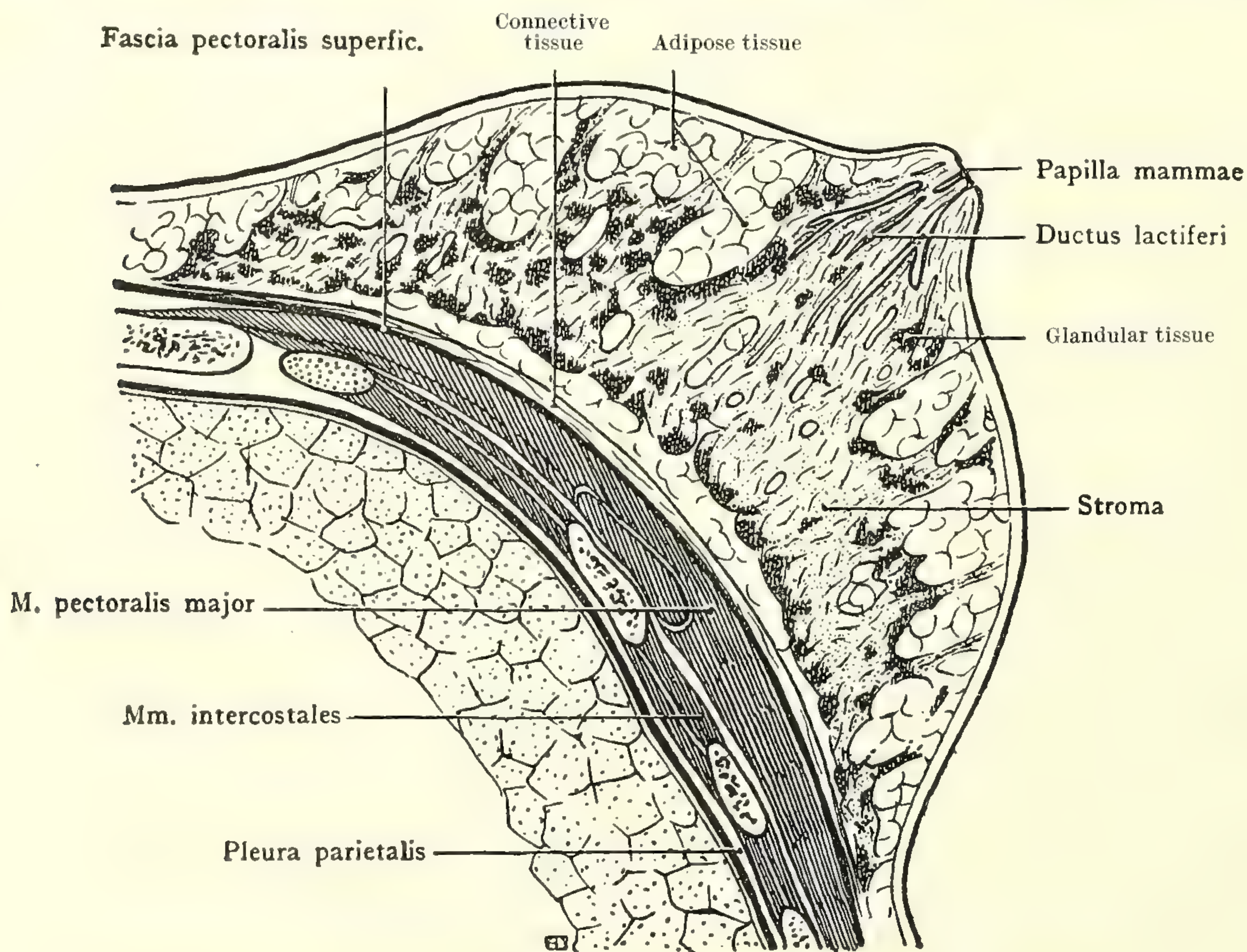


FIG. 334.—Sagittal section through the female mammary gland. (After Corning.)

tive tissue. The efferent ducts (*ductus lactiferi*) converge towards a protuberance which is more highly pigmented than the rest of the organs externally. This is the nipple or papilla (Fig. 334). In the prenatal stages of development the breasts

\* [Cf. the recent study by Gläsmér and Amersbach, and for the lesser known material, see Witkowski<sup>3, 4</sup> and Snoop.]



are first perceptible in the shape of the so-called *linea lactea*, which run vertically backwards. Then the epithelium thickens and forms the milk glands. Milk glands appear among the mammalia (whose special characteristics they are) in two types of formation :

- (1) As a row of small glands.
- (2) As single large glands.

The *linea lactea* varies in position among the mammals. In primates and mankind it is in the thorax ; in the mare and cow nearer the hindquarters on the abdomen. In Fig. 335 a human embryo of 13.5 mm. length is depicted so as to show the *linea lactea* or *crista lactea*. The dots show where the gland will develop ; in

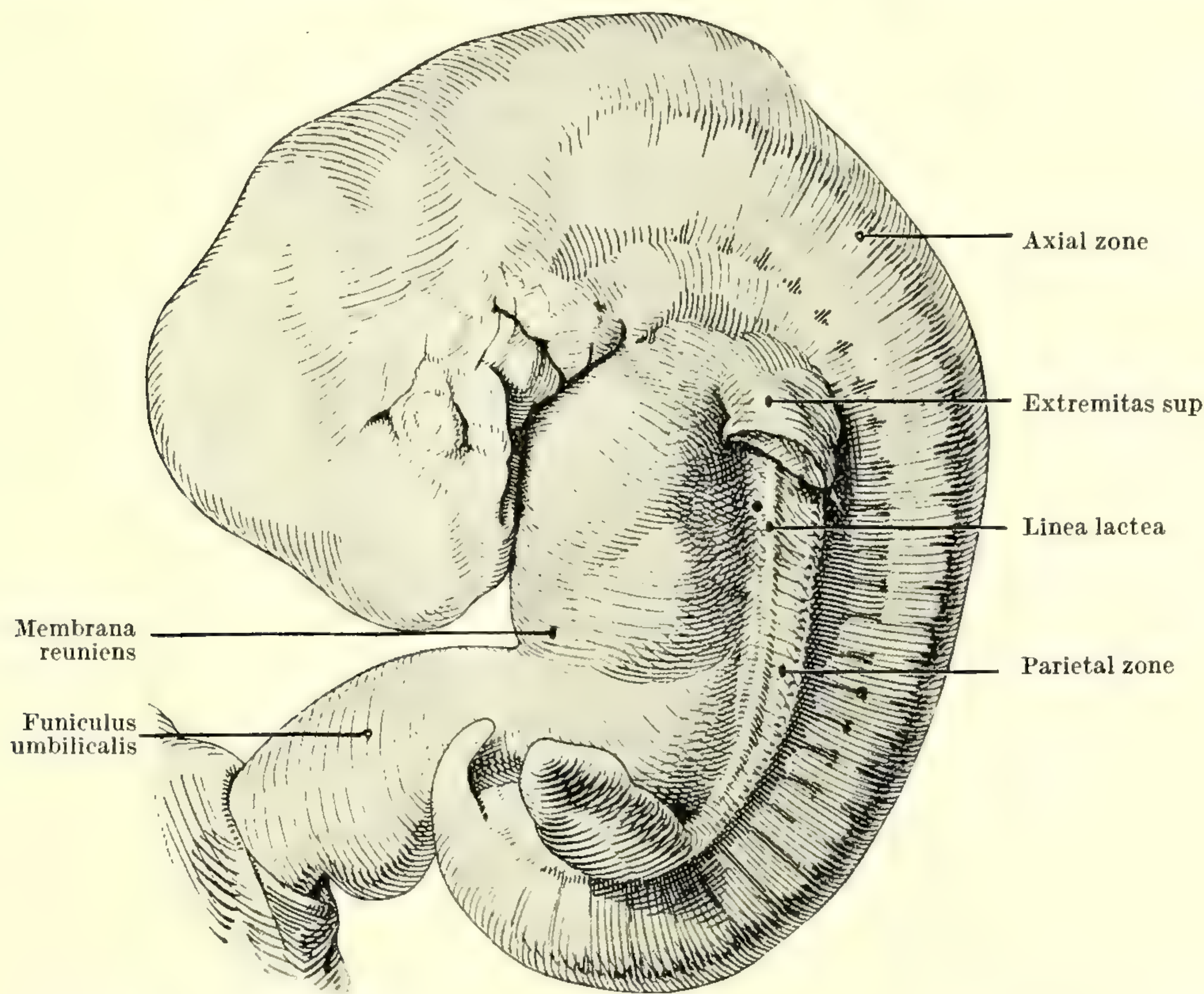


FIG. 335.—Crista lactea in a human embryo of 13.5 mm. (After Kollmann.)

most animal species there are multiple glands ; in mankind normally only two, one on either side of the thorax. But there may be accessory or supernumerary mammary glands in human beings. A. v. d. Heide finds three main structural types among these supernumerary glands.

(1) *Micromammæ*. These have all the characteristic qualities and parts of a mammary gland ; they have glandular tissue, ducts and papillæ, but all of small size.

(2) *Hyperthelia*. Supernumerary nipples, which have neither glandular tissue nor ducts.

(3) *Subcutaneous forms*. Consisting wholly of glandular tissue. The investigator (A. v. d. Heide) only found 35 cases of these and all were situated in the armpit. He takes these to be highly differentiated sudoriferous glands, which have been influenced by pregnancy.



The adjoined illustrations show the later development of the mammæ in the embryo. Fig. 336A shows the thickened raised area of the ectoderm.

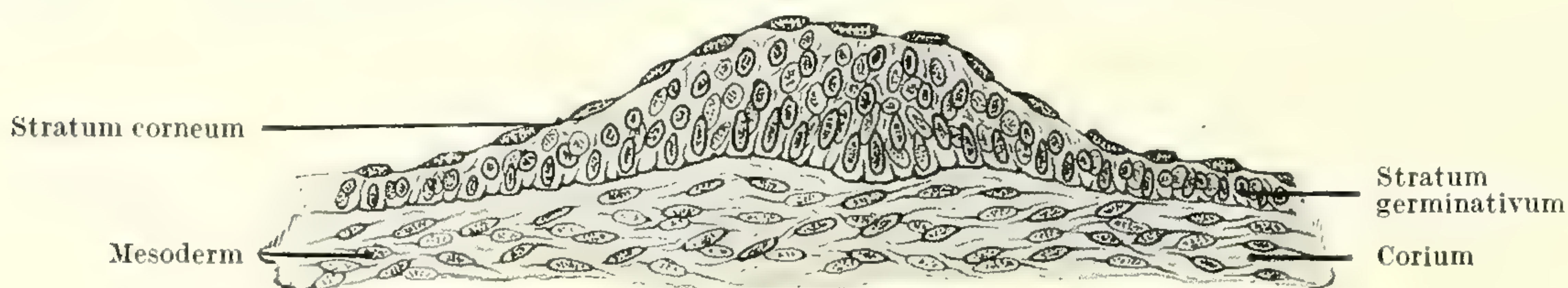


FIG. 336A.—Crista lactea in a human embryo of 13.5 mm. Stage 1. (After Kollmann.)

Fig. 336B shows the second stage of growth, the local proliferation of the cells of the *stratum granulosum*; and

Fig. 336C shows that the gland has spread from the ectoderm downwards to

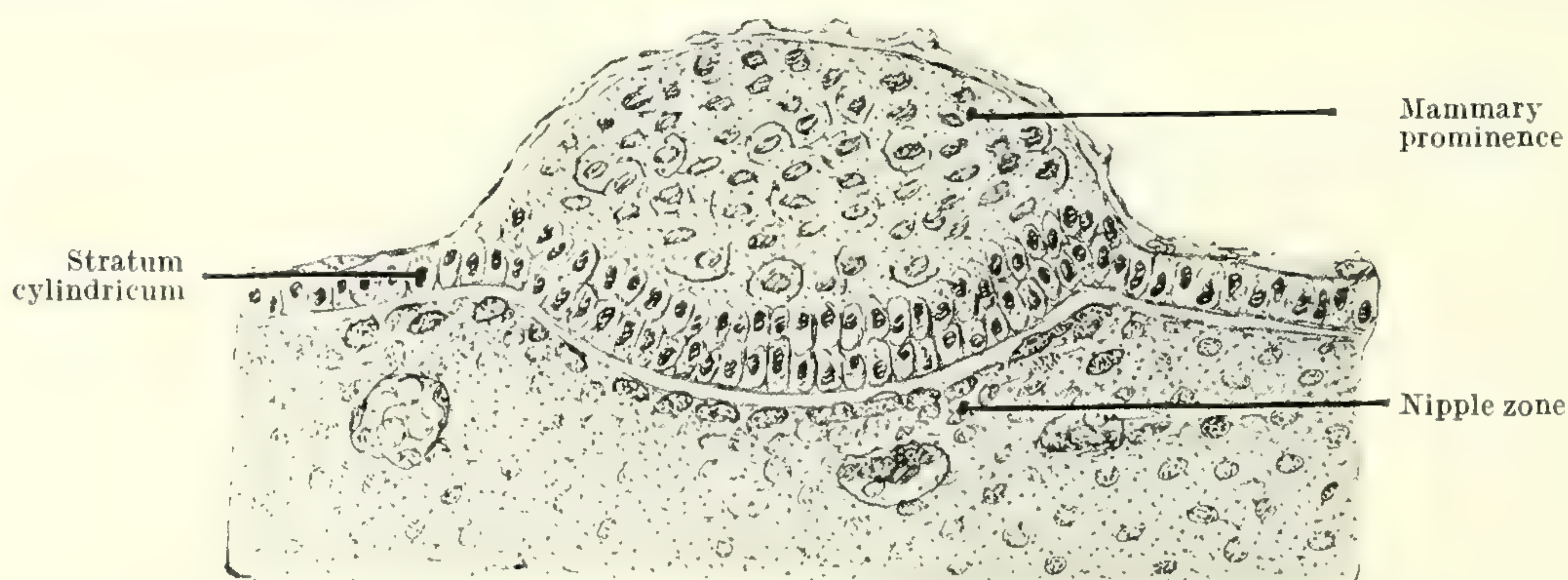


FIG. 336B.—Anlage of the mammary gland. Stage 2. Lenticular anlage.

the mesoderm and formed a pit. In the next stage (Fig. 336D), we see two processes forming in the corium; and, as a final process we see an expanding glandular

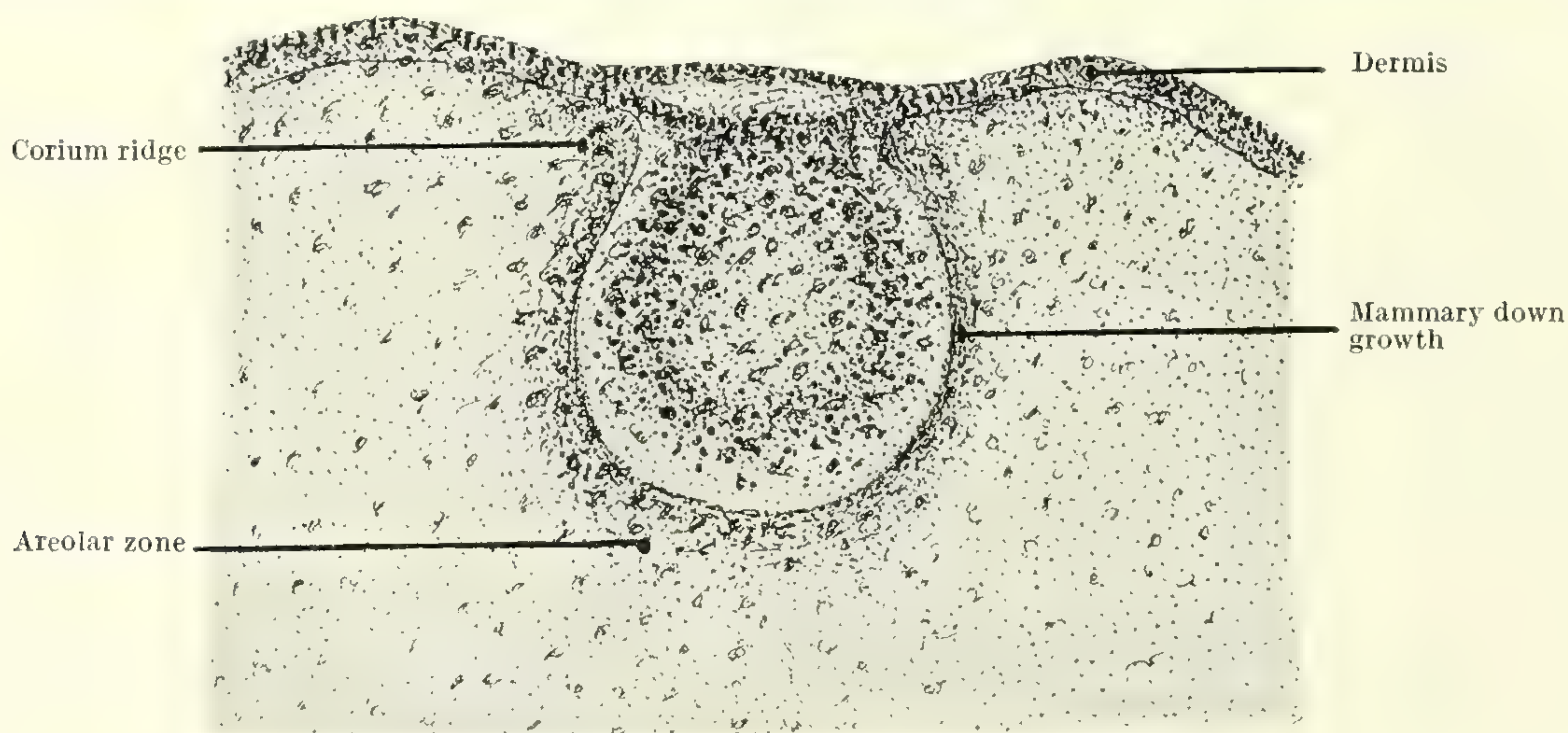


FIG. 336C.—Bulb-shaped anlage. Stage 3. Eight weeks.

structure and several secondary processes ramifying into the stroma. It may be added that Fig. 336c is of the formation in an embryo of eight weeks, and Fig. 336D of a later stage, when the embryo has reached 11 cm. in length.



The *area mammæ* is typical of the primates, but very slight in some anthropoids. According to H. Friedenthal,<sup>4</sup> it is largest in the European races and in the Australian aborigines.

Friedenthal first observed a perceptible domed *nipple* among primates in a

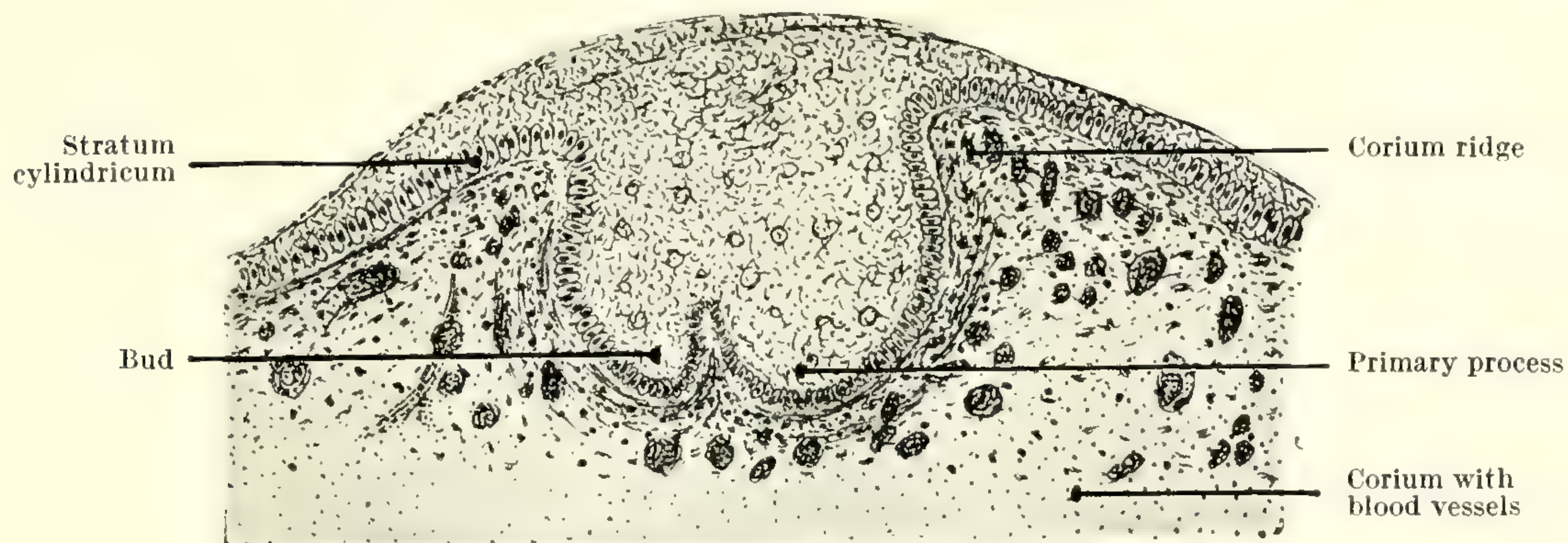


FIG. 336D.—Process-producing period. Stage 4. 11 cm.

young female chimpanzee in the Berlin Zoological Gardens at the age corresponding to puberty. It resembled somewhat the stage of development known as *mamma areolata* in human beings. Moreover, the supernumerary glands in the axilla are now known not to be a wholly human feature.

In 1909 Brinkmann recorded cases in a gorilla and a chimpanzee. In one male chimpanzee and one female of about five years, this accessory gland lay in the deepest hollow of the armpit under a thick tuft of hair; and in a young gorilla there was an unmistakable rudimentary anomaly of this kind. M. Bartels, however, found no such symptoms in any orang or hylobates.

A well known and very frequent anomaly is *asymmetry* of the breasts, one side being much larger than the other. Variot and Lassablière made investigations and tabulations on 550 French wet nurses. They found that the left mammary gland was the larger in 51 per cent. of the cases, the right in 25 per cent., and that the two were equal in only 24 per cent. The milk capacity of the glands was proportionate to their variation in size. This discrepancy is doubtless partly due to the habit of the nurses of offering the left side first to the baby, but is also in some cases hereditary. Mme. Pellut Edwards found greater size of the left breast in more than half the cases of girls she investigated (55 per cent. of 51 total). Koehler has also found hereditary factors in mammary development. He records hypertrophy of both breasts in a 12-year-old girl, in whom menstruation had not yet appeared. Both breasts were as large as a man's head; and this extraordinary characteristic had appeared also in the girl's mother,



FIG. 337.—Diffuse hypertrophy of the breast. (After Warren.)



maternal grandmother and great aunt. But, at later stages of growth, the breasts diminished and assumed normal proportions.

[Gould and Pyle record a number of instances of diffuse hypertrophy of the breast. In one case a girl of 14 had breasts weighing 259 oz.; a woman of 30 had breasts weighing 52 lbs. In another case the breasts of a girl of 15 had circumferences of 94 cm. and 105 cm. respectively; whilst in a woman of 26 the right breast hung down to the anterior superior iliac spine. In several tribes the native women fling the breasts over their shoulders when occasion demands (*cf.* also, Labbarque, Kohlgrüber, Lemuet, Pasquier.)]

As long ago as 1872 Dr. Heinrich Ploss<sup>12</sup> indicated the importance of mammary structure in comparative anatomy and anthropology. The French anthropologists in the "Instructions" have also made an attempt to differentiate and classify the characteristic structural types in a clear and graphic manner. They say of the breasts in women:

"Elles sont tantôt hémisphériques, tantôt plus ou moins pendantes, tantôt piriformes, c'est-à-dire, en forme de poire."

But these categories are not comprehensive enough, or sufficiently graphic to replace any pictorial representations or more detailed descriptions. Nor do they exhaust all possible mammary shapes and types. Of recent years much more has been learnt in Europe of the coloured races, and photography has been developed and used by anthropologists to a wide extent. We are, therefore, in a position to affirm that there are actually ethnical differences in the shape of the breasts in women.

Hyrtl,<sup>1</sup> was formerly of the opinion that "the breasts are hemispherical\* only among the white and yellow races when in their compact virginal state; in negresses, equally young and equally normal, they are more elongated, tapering, drooping (with a slight outward angle) and, in short, udder-like."

We must not forget, however, that even in one and the same individual the breasts pass through various phases of development of very different kind. Thus, in making any pronouncements on racial characteristics of the breasts, we should take into careful consideration the stage of life or physical condition of the individuals in question.

In every race the breasts of nulliparæ are distinctly different from those who have borne children and especially from those who have suckled more than one child. Lactation elongates the breasts to a greater or lesser degree, and is only too apt to render them wrinkled, slack, mis-shapen and of irregular contour. Advancing years, moreover, often turn them into mere flaps or folds of skin or even obliterate them, leaving only the nipple in token of their former site. It is one of the unaccomplished tasks of anthropology to decide and define the approximate average date and duration of these changes and the degree they attain in the various ethnical and sociological groups.

We are also ignorant of many of the details of the transition from the puerile or neutral phase of childhood to the typical feminine structure. Here, too, there are many differences.

As a rule, in dealing with racial differences in this region, we shall refer to their youthful or virginal condition in girls and young women in full sexual maturity

\* [In the English-speaking countries it may be said broadly that the hemispherical type of breast is the general standard of beauty. When the nipple is erect there is slight tendency to the conical when viewed laterally. The breasts do not simply rest upon the front of the body. They rest horizontally both in front and at the sides, so that in the ideal form the nipples appear as if they were straining away from one another.]



and undeformed by the effects of parturition and nursing. Even so there are many differences in the different races and individuals.

One of the first distinctive features in the mounds of the breasts is their setting : do they rise suddenly from a comparatively flat surface, or do they gently swell upward in a gradual outward curve from the collar bone ? We must also consider their position : whether high or low on the thorax and whether nearer the median line of the body or more lateral and closer to the armpits. And their most significant characteristics are their size, their consistency or texture, and their shape.

Special attention should be paid to the nipples and to the areas immediately surrounding these, the so-called areolæ, which, as M. Bartels has pointed out, are also full of fine shades of individual difference. Indeed, neither the "Instructions anthropologiques générales," mentioned above, nor the "Eléments d'Anthropologie générale," by Topinard, have adequate suggestions for classification in these respects. It is indisputably one of Max Bartels' great services to the sciences of anatomy and ethnology that he both grasped the main differences and illustrated them in these studies.

His classification has not been superseded, nor can it be improved.

He distinguished four mammary types according to size :

- (1) Highly developed or exuberant.
- (2) Full.
- (3) Moderate.
- (4) Small, slight or flat.

Three according to consistency :

- (1) Firm (erect).
- (2) Soft (relaxed, drooping).
- (3) Flabby (pendulous).

Four according to shape :

- (1) Bowl-shaped, in which the height is less than the radius of their circumference.
- (2) Hemispherical, in which the height is equal to the radius of their circumference.
- (3) Conical, in which the height is greater than the radius.

- (4) Elongated, as in the udder of the goat, and with nipples pointing downwards.

The fact must not be overlooked that drooping or even pendulous breasts may owe this quality as much to their conical shape as to their slack texture. Piriform breasts may be as firm as bowl-shaped or hemispherical. Moreover, the firmest breasts are inclined to droop somewhat in certain bodily postures, *e.g.*, when stooping or lying on one side.

[Jayle<sup>2</sup> has distinguished nine varieties of breast, the globular or hemispherical (*sein en globe ou globuliforme*) ; the conical (*sein conique*) ; the apple-shaped (*sein en pomme*), which corresponds perhaps to the bowl-shaped of Bartels ; the piriform (*sein en poire ou piriforme*) ; the *sein à tête de brioche*, by which is understood the breast which is surmounted by a prominent hemispherical areola ; the flattened

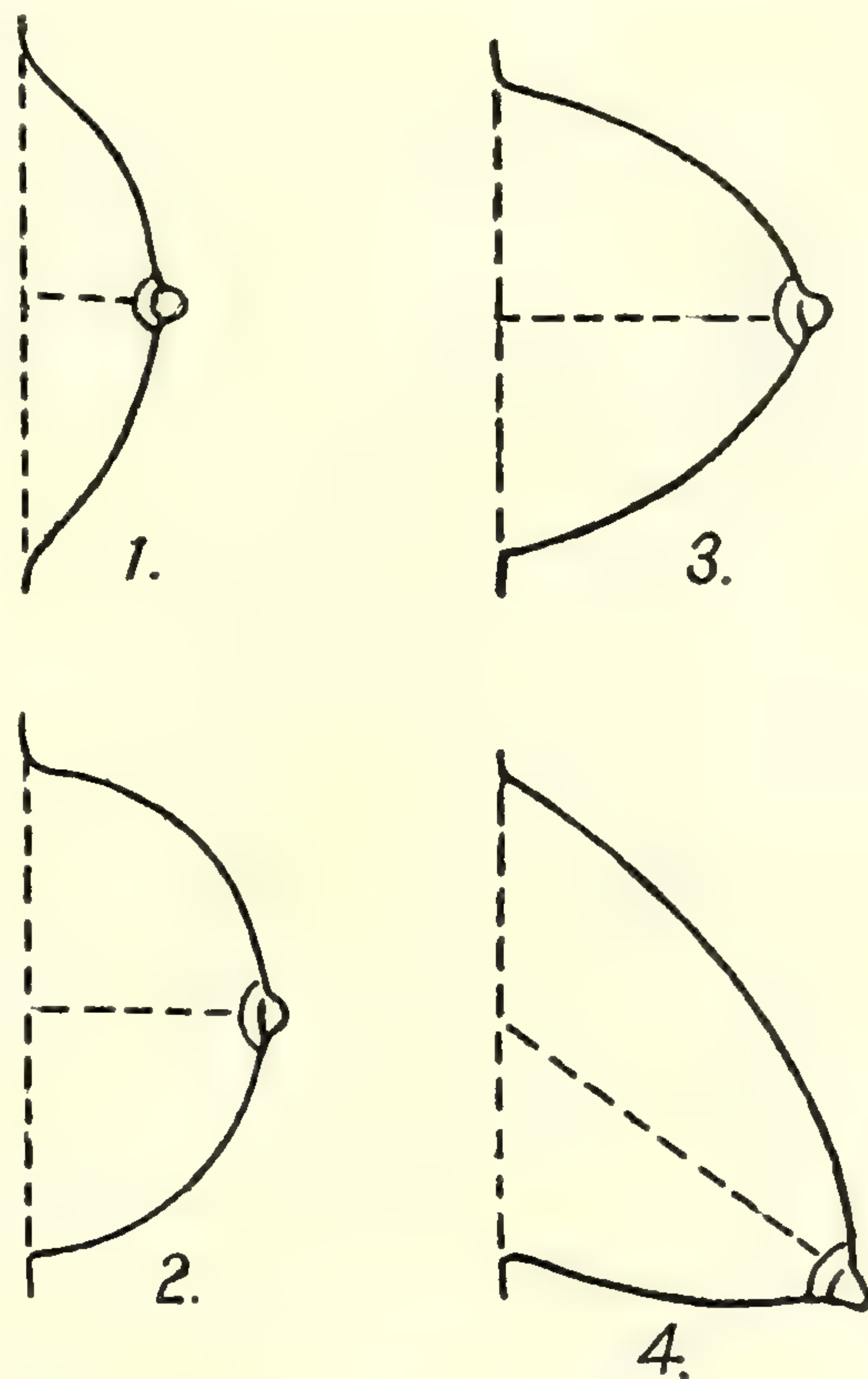


FIG. 338.—Schematic representation of mammary shapes.

- |                 |                   |
|-----------------|-------------------|
| 1. Bowl-shaped. | 2. Hemispherical. |
| 3. Conical.     | 4. Elongated.     |





FIG. 339A.—Hindu with bowl-shaped breasts.  
(Photo, C. Günther, Berlin.)



FIG. 339B.—Australian with hemispherical breasts.  
(Photo, C. Günther, Berlin.)

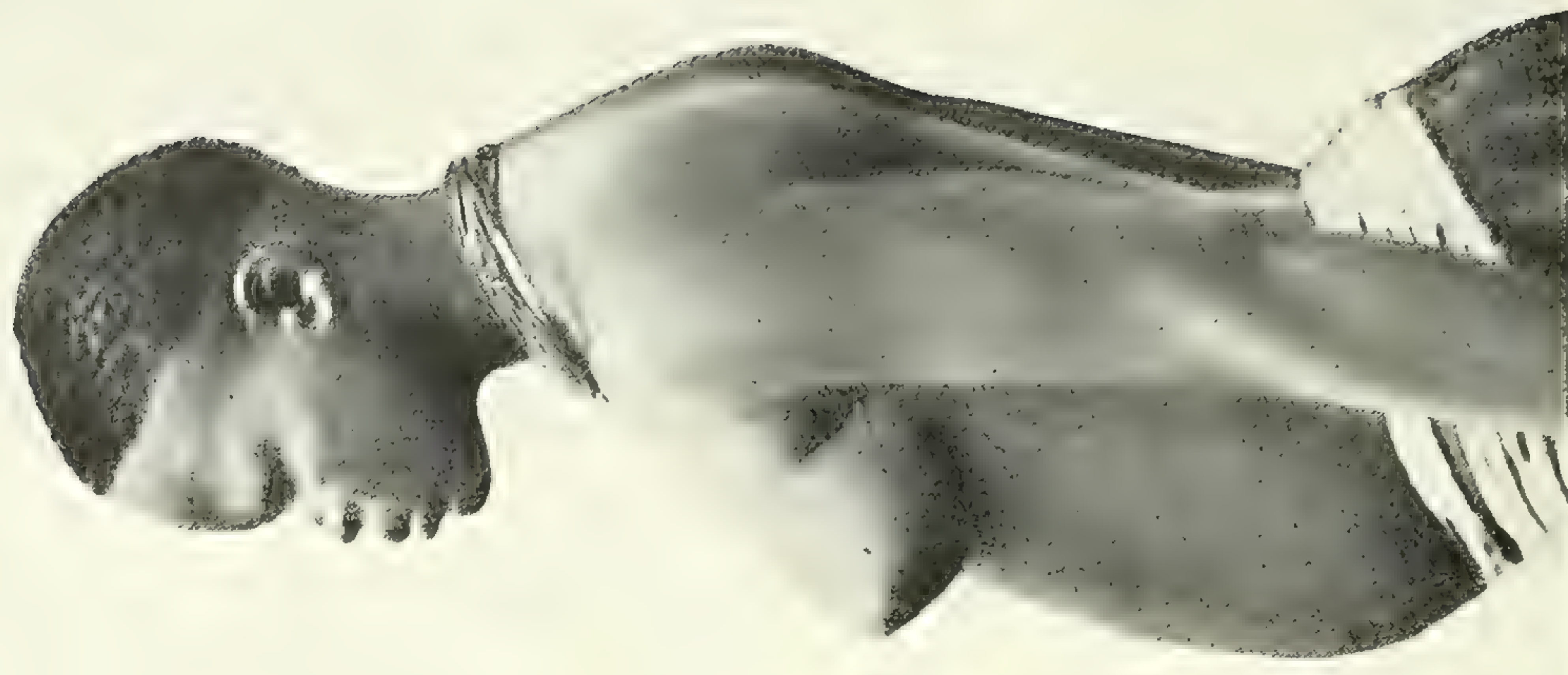


FIG. 339C.—Magungo with conical breasts.  
(Photo, R. Buchta.)



(*sein en galette*); the flat (*sein plat*), where there is little perceptible elevation; the flat-nippled (*sein platythèle*), and the endothelic (*sein endothèle*) in which the nipple is retracted.

It will be observed that Jayle's classification does not confine itself to the *breasts*, but includes variations in the areola and nipple. Thus it is not so convenient as those which strictly confine themselves to the individual parts. On the other hand Jayle is right in insisting on the *normal* condition of the breasts at various

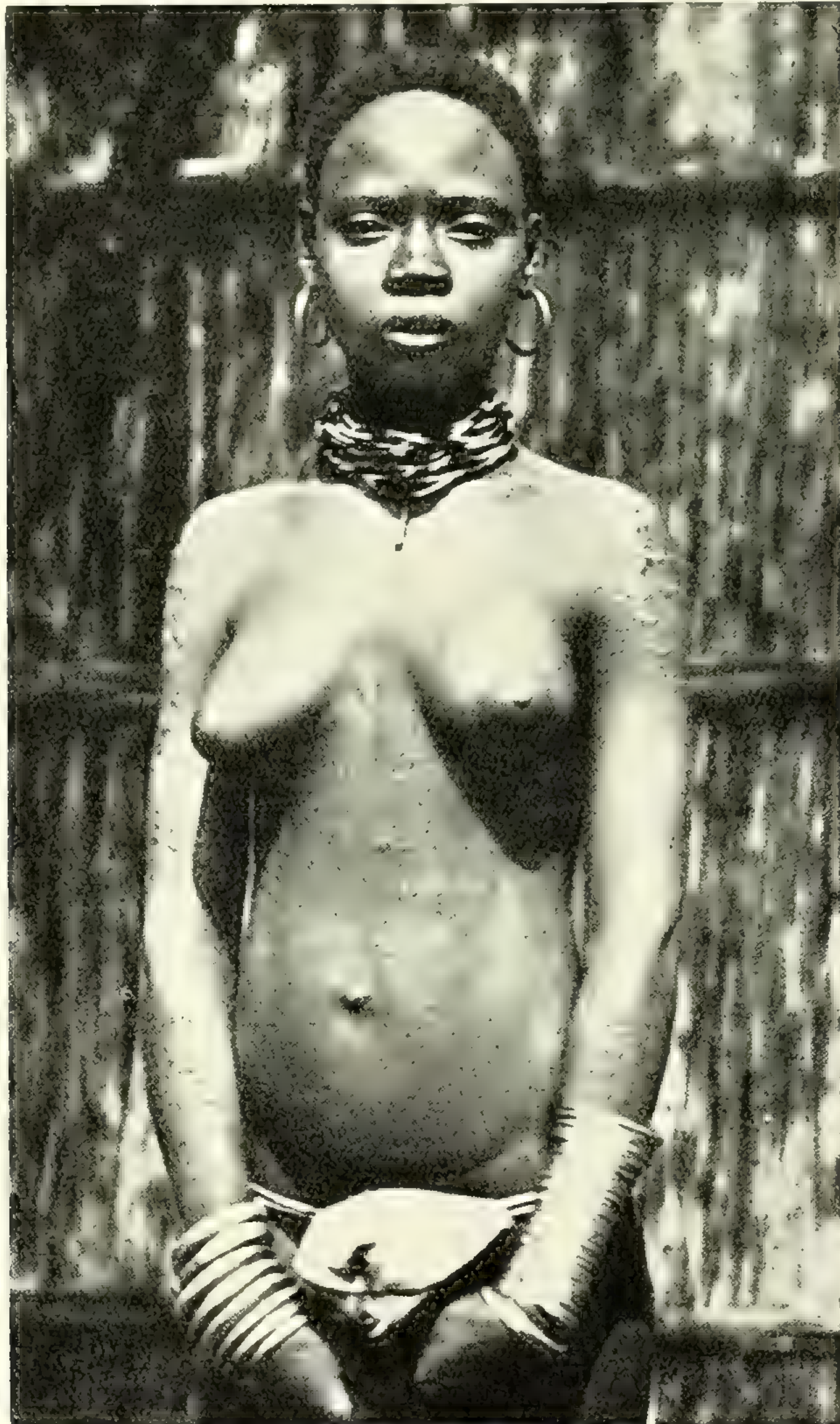


FIG. 340A.—Niam-Niam with elongated breasts. (Photo, R. Buchta.)

ages, a point which we have also discussed in examining the vulva. His account also is valuable in its discussion of the aspect of the various parts of the body in different positions.]

Asymmetry of the breasts has already been mentioned, and is apparently frequent among coloured races, as was observed by R. Burton in the Yoruba Territory on the Niger; by P. and F. Sarasin among the Vedda of Ceylon; and by Ling Roth,<sup>2</sup> who records the case of a young Tasmanian whose right breast was fully and normally developed while the left was quite flat. Max Bartels has stated that mammary asymmetry must have been frequently found in ancient India, for



“unequal breasts” were, according to Schmidt, among the physical qualities which suitors were warned against in young girls. This asymmetry also is marked in two of Falkenstein’s photographs of Loango negresses, and also in one of a Herero woman (South-West Africa). P. Bartels found the same, to an unusual degree, in a photograph taken by Seiner (Fig. 300) of a Bushwoman and of an Australian black by Kerry (Fig. 342).

Mammary asymmetry, both in size and shape, occurs also in women of white



FIG. 340B.—Lepcha (N. India) with elongated breasts.

race. Rothe<sup>2</sup> found 23 such cases of difference in shape among 1000 North German women, but there was never any great variation in this respect. Asymmetries of size were much more frequent, namely, in 38·3 per cent. of the cases; and in 31·3 of these the left breast was the larger; only seven had larger right breasts. The same kind of results were found by Variot and Lassablière in their examination of French countrywomen who were wet nurses. In 550 cases 24 per cent. showed equality in size, whilst in 50 per cent. the left breast was larger than the right, and in 25 per cent. the reverse. Variot, Lassablière and Rothe believe this is due to the right-handedness of the majority of women and the method of holding babies.



Brehm recorded the observation that in the Sudan, the babies and young children, riding on their mothers' hips, drew down one breast and thus elongated it.

Buschan<sup>4</sup> and Mme. Pellut Edwards believe asymmetry hereditary, and confirmed the greater size of the left breast in most cases.

In 21 out of his 1000 cases Rothe<sup>2</sup> found excessive asymmetry. In 57.14 per cent. of these 21 the left breast was of moderate size, the right small; in 19.05 per cent. the left full and the right moderate; in 9.53 per cent. the right full and the



FIG. 340c.—Niam-Niam with elongated breasts. (Photo, R. Buchta.)

left moderate; 4.76 per cent. had exuberant right breast and full left, and the same number had the right moderate in size and the left small, or the left very full and the right full. In 80.95 per cent. the left breast was the larger, and in only 19.5 per cent. the right (*cf.* Figs. 338 ff.).

Exact and numerous measurements of individuals, as distinct from descriptions of the general impression produced by whole races, photographic material, and especially casts would contribute helpfully to our knowledge of comparative anthropology in this direction.

As a rule, it is probable that early sexual maturity—as is frequent in the tropics





FIG. 341.—Sicilian with large areolæ. (Photo, v. Gloeden, Taormina.)





FIG. 342.—Woman from North Australia with asymmetry of breasts. (Photo, Kerry, Sydney.)

—coincides with the early expansion and the early involution of the mammary glands.

## 2. THE AREOLA OF THE NIPPLES

The differences in the areola seem rather more individual variations than ethnical characteristics ; nevertheless, there are undoubtedly also racial tendencies.



The areolæ vary in size, in colour and in shape. The skin which covers them is, in all cases, thinner and more delicate than that of the main mass of the glands.

Among European women the areolæ are pale or deep pink in blondes ; and in women of dark complexion they may have a brownish tint or even a line so dusky as to approach black. Little is known of these variations in colour among the yellow and black races.

The areolæ vary greatly in size, but in the same individual they are generally bilaterally symmetrical. Their outer circumference is generally circular, more rarely oval or ellipsoid. The average diameter of the areola is from 2 to 4 cm., but a larger size does not necessarily imply previous pregnancy. A case known to



FIG. 343.—Hawaiian with very large areolæ. (Photo, R. Neuhauss.)

M. Bartels in Berlin was that of a young girl, a virgin between 18 and 20 years old, with full breasts and areolæ of unusual size, their diameter being between 6–7 cm.

[In the accompanying photographs various forms of areolæ are depicted. Fig. 341 shows a large type of areola in a Sicilian, whilst Fig. 355 shows a girl from the same locality in which the areolæ are somewhat small. Fig. 343 shows a woman from Hawaii in whom the areolæ are unusually large.]

The areola is not always sharply outlined in its circumference ; there are occasionally narrow-pointed edges which have almost a jagged appearance like a star. But, as a rule, the circumference is clearly defined by the difference of colour between the elevation of the breast and the more highly pigmented areola and nipple. Sometimes the areola is surrounded by a ridge of minute rounded projections set in a circle. These are collections of cutaneous glands and are termed *tubercula areolæ* (cf. Fig. 344, and also Pl. XLVI. in Ellwood and Yerbury).

Natanson and Goldschmidt found two distinct kinds of *tubercula areolæ* : “ Careful inspection with the aid of magnifying glasses showed that some of these





FIG. 344.—Sicilian showing rings of tubercula areolæ. (Photo, v. Gloeden, Taormina.)



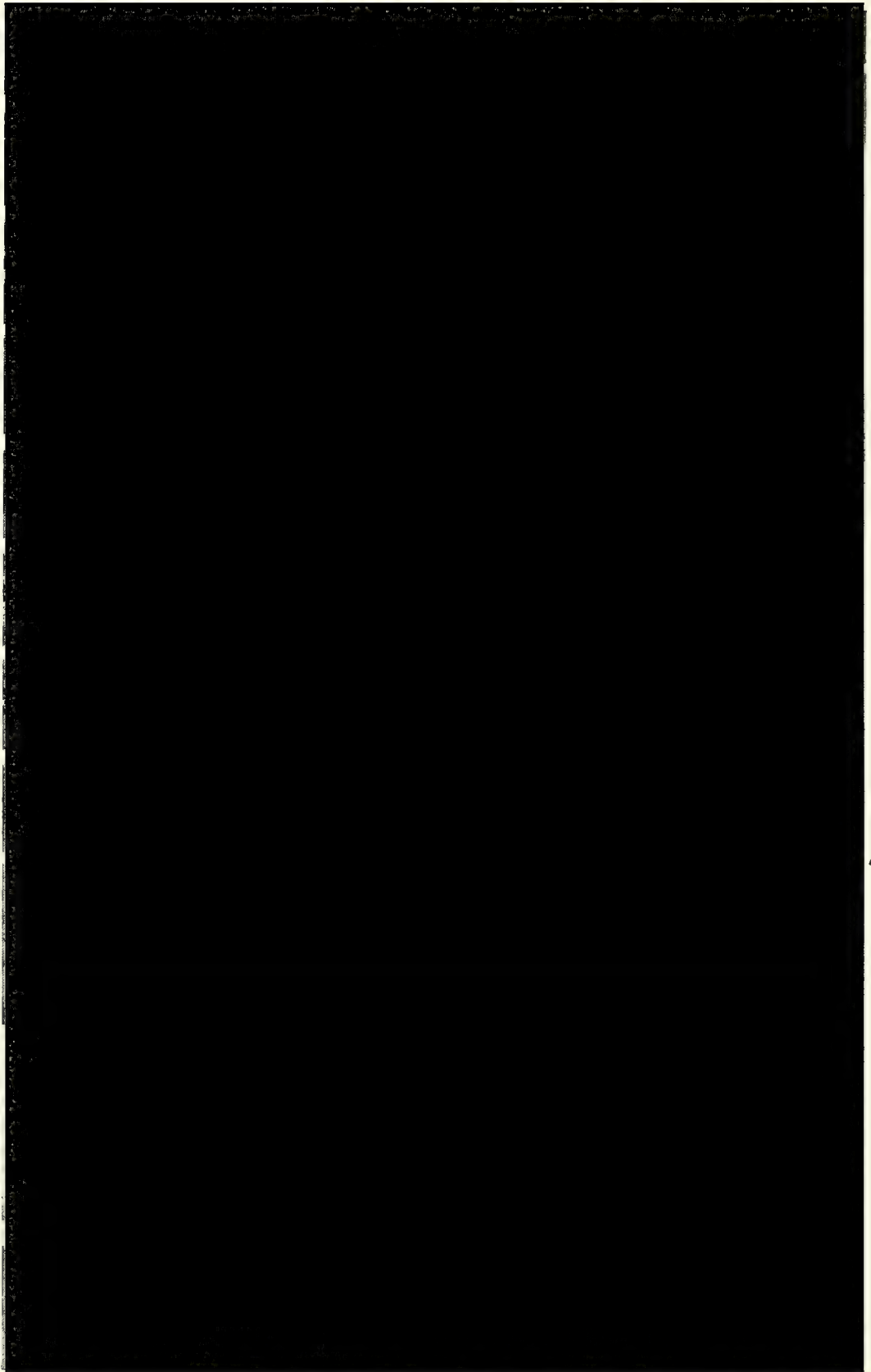


FIG. 344A.—Commencement of the development of the breasts in a Tunisian girl. (After Lehnert and Landrock.)



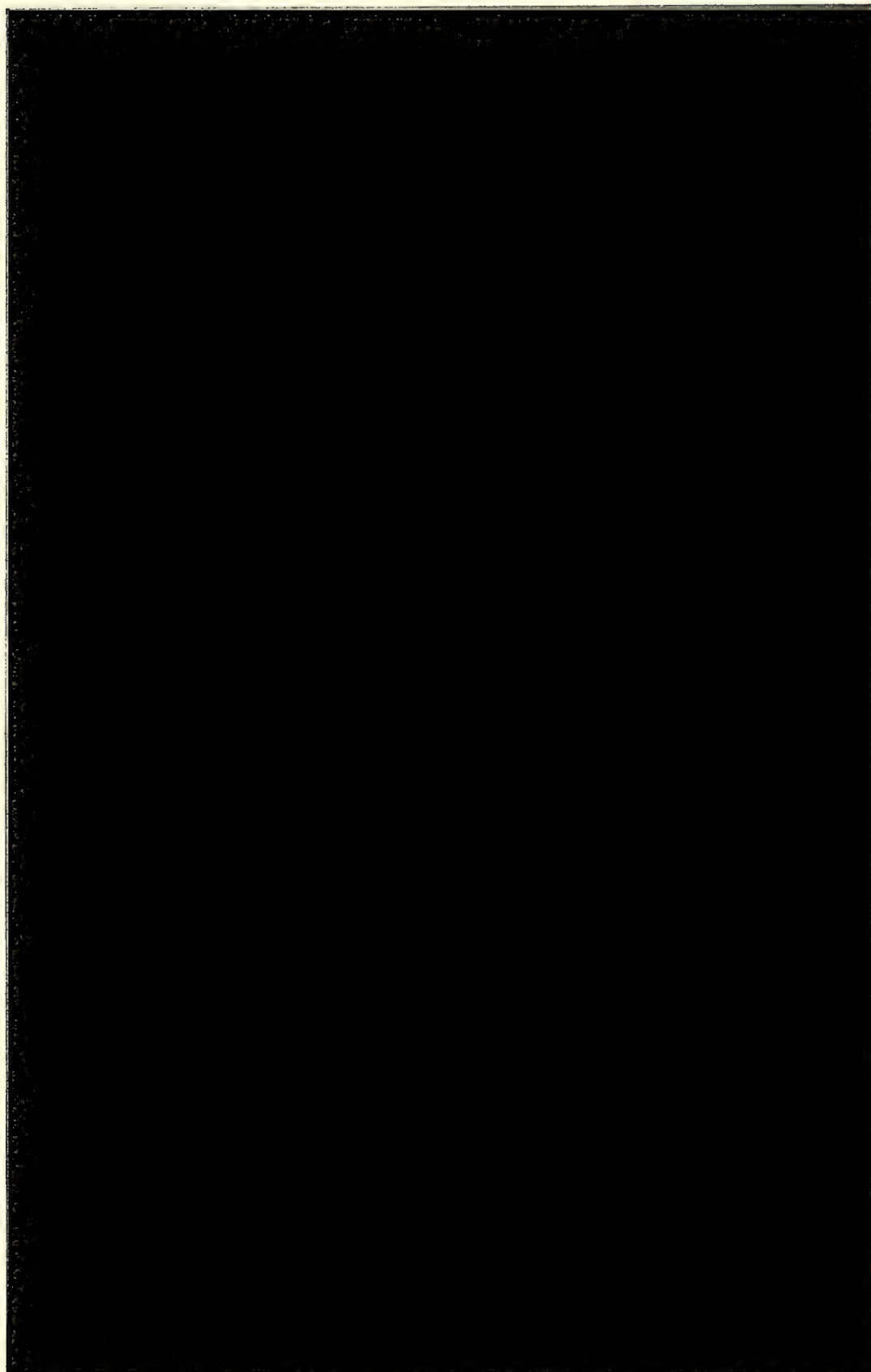


FIG. 344B.—Early stage of bowl-shaped breasts in a Tunisian girl. (After Lehnert and Landrock.)



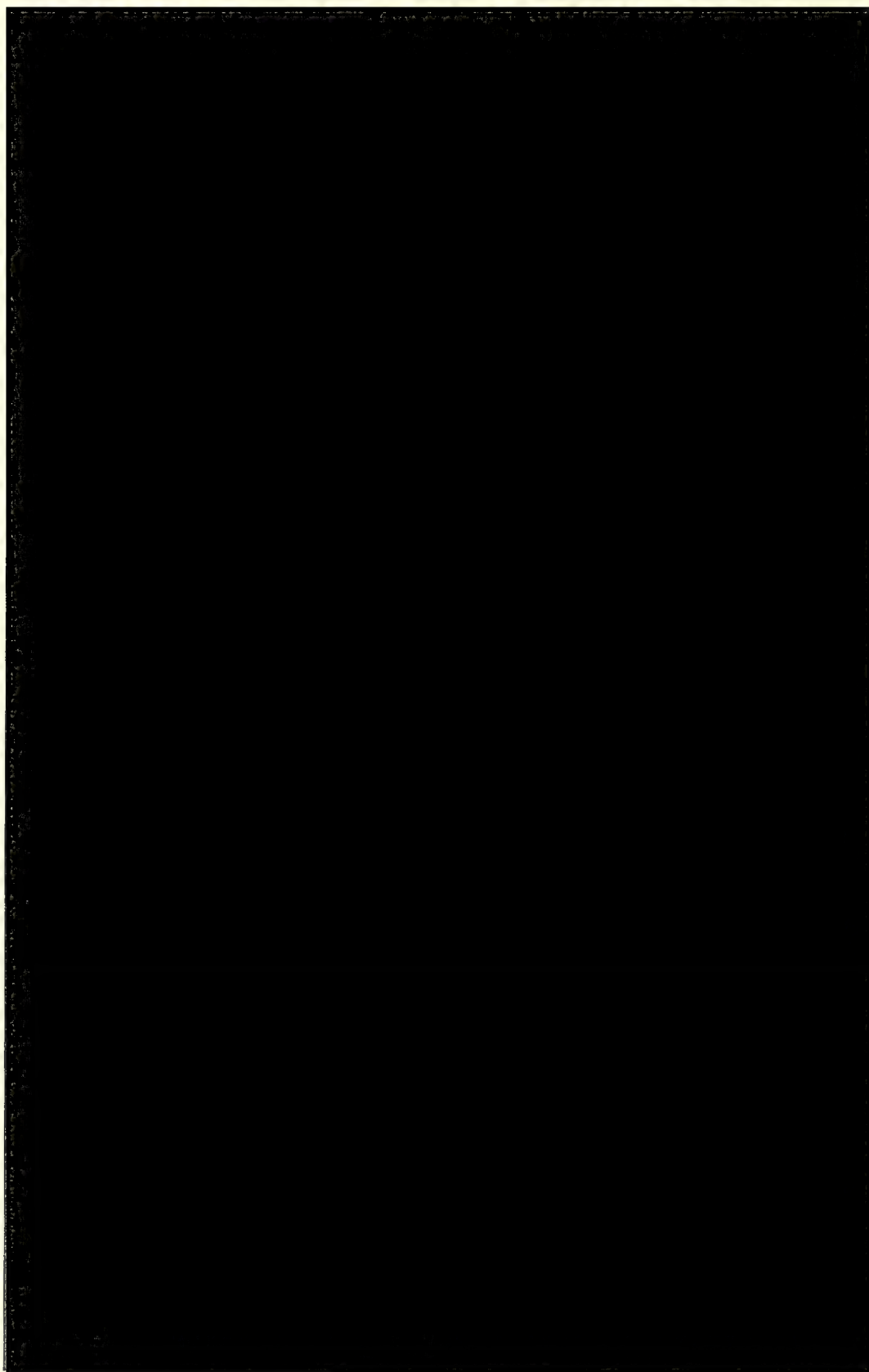


FIG. 344c.—Firm resilient breasts in a Tunisian. (After Lehnert and Landrock.)



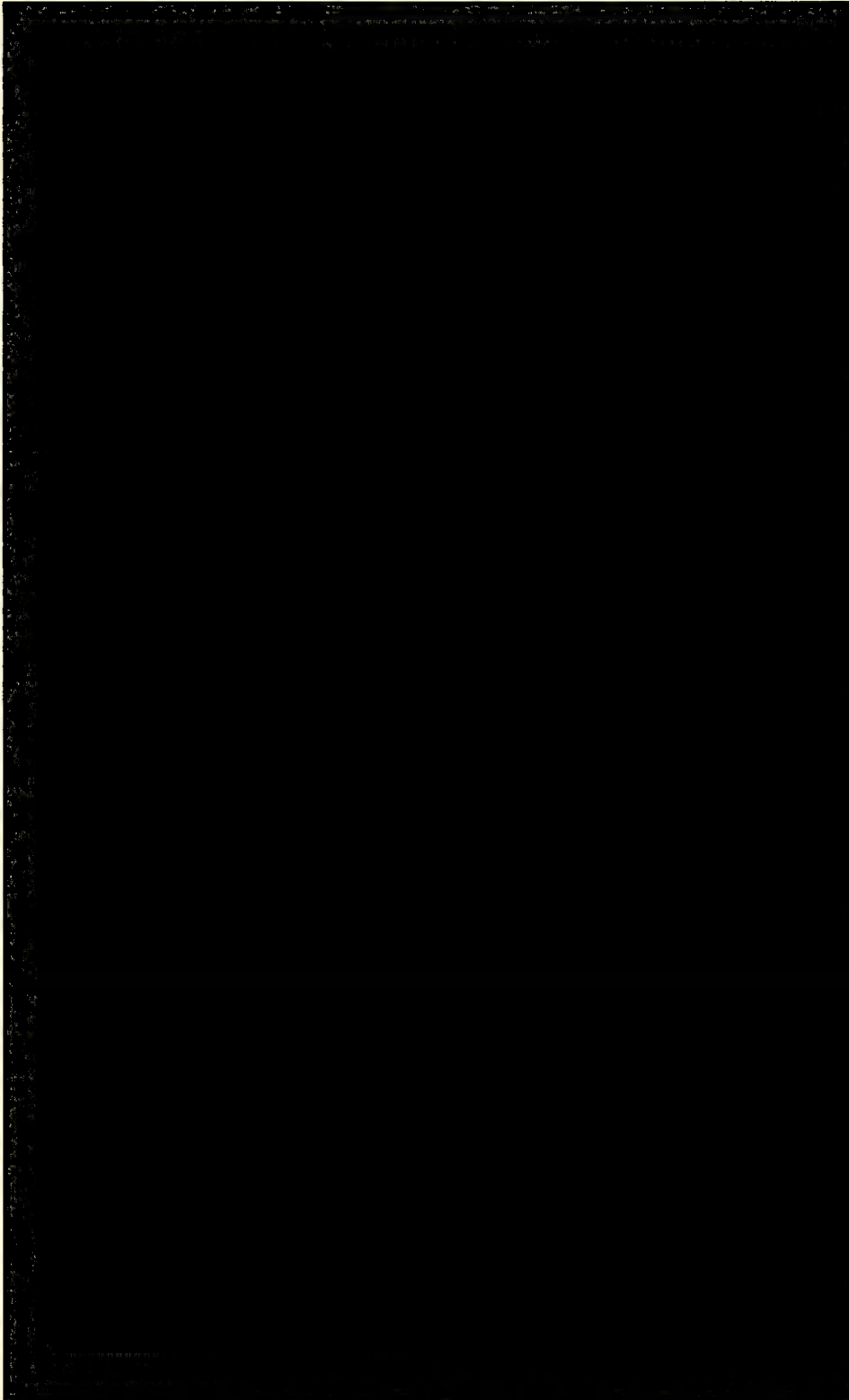


FIG. 344D.—Early stage of pendent breasts in a Tunisian. (After Lehnert and Landrock.)



little nodules were of the kind found in both sexes and in all ages ; these are termed '*tubercula Morgagni*' ; they are rounded in form and always contain sebaceous

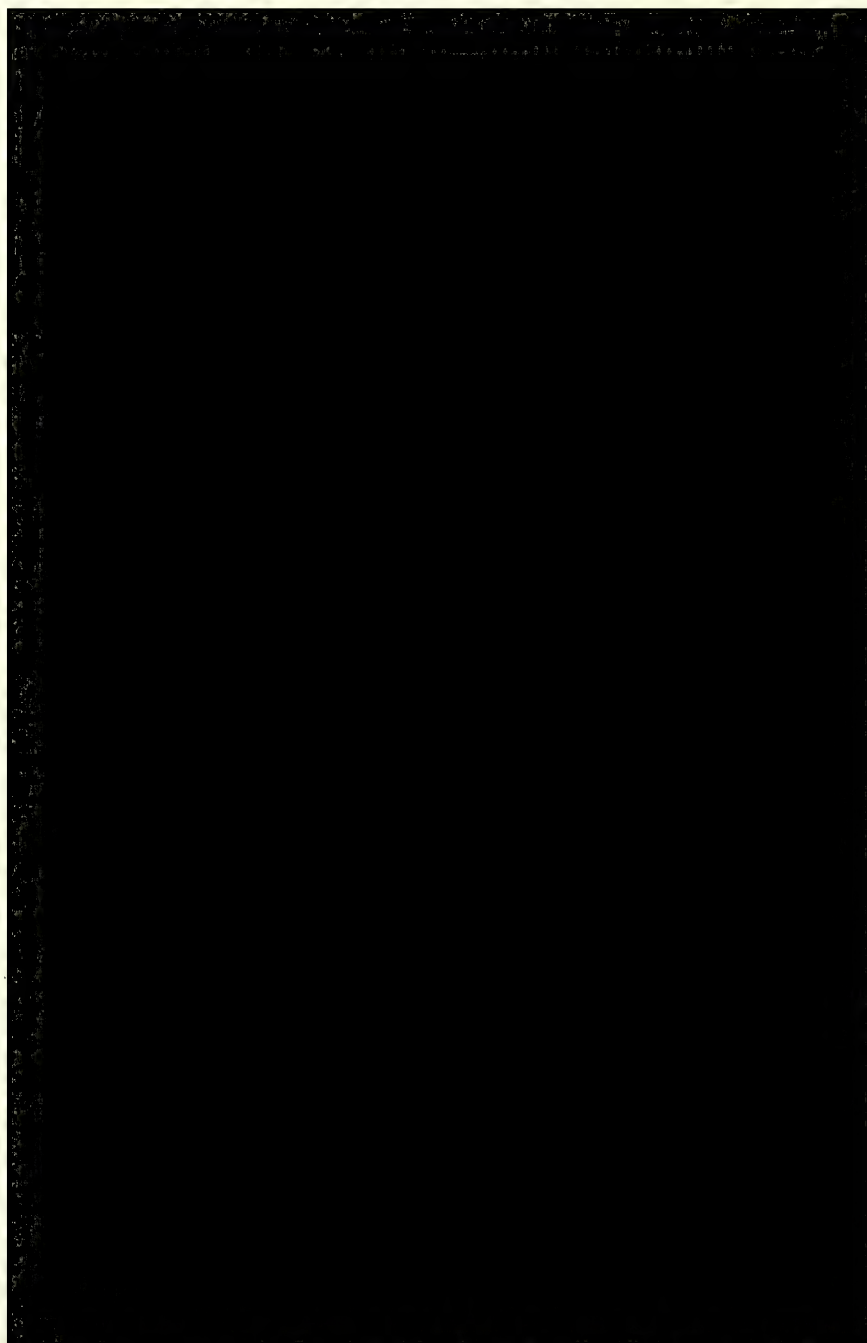


FIG. 344E.—Pendent breasts in a woman of 20 years from the Admiralty Islands. (Photo, Mus. f. Völkerk., Dresden.)

glands which may have hairs growing from them and sudoriferous glands as well. The other type of nodule is peculiar to the female breast and develops chiefly under the influence of pregnancy ; they are larger and more sharply ridged, and are known as '*tubercula Montgomery*.' Their structure is more complicated and diverse than



the former; they may contain accessory milk lobules or combinations of milk globules, sudoriferous glands, sebaceous glands with hairs, or only lacteal ducts



FIG. 344F.—A Negritto-girl with pendent breasts. (After Schadenberg.)

rising from the base of the mammæ and sometimes combined with the accessory lacteal ducts.”





FIG. 345.—Sicilian with raised and sharply defined areolæ. Frequent form in Southern Europe due possibly to racial admixture.



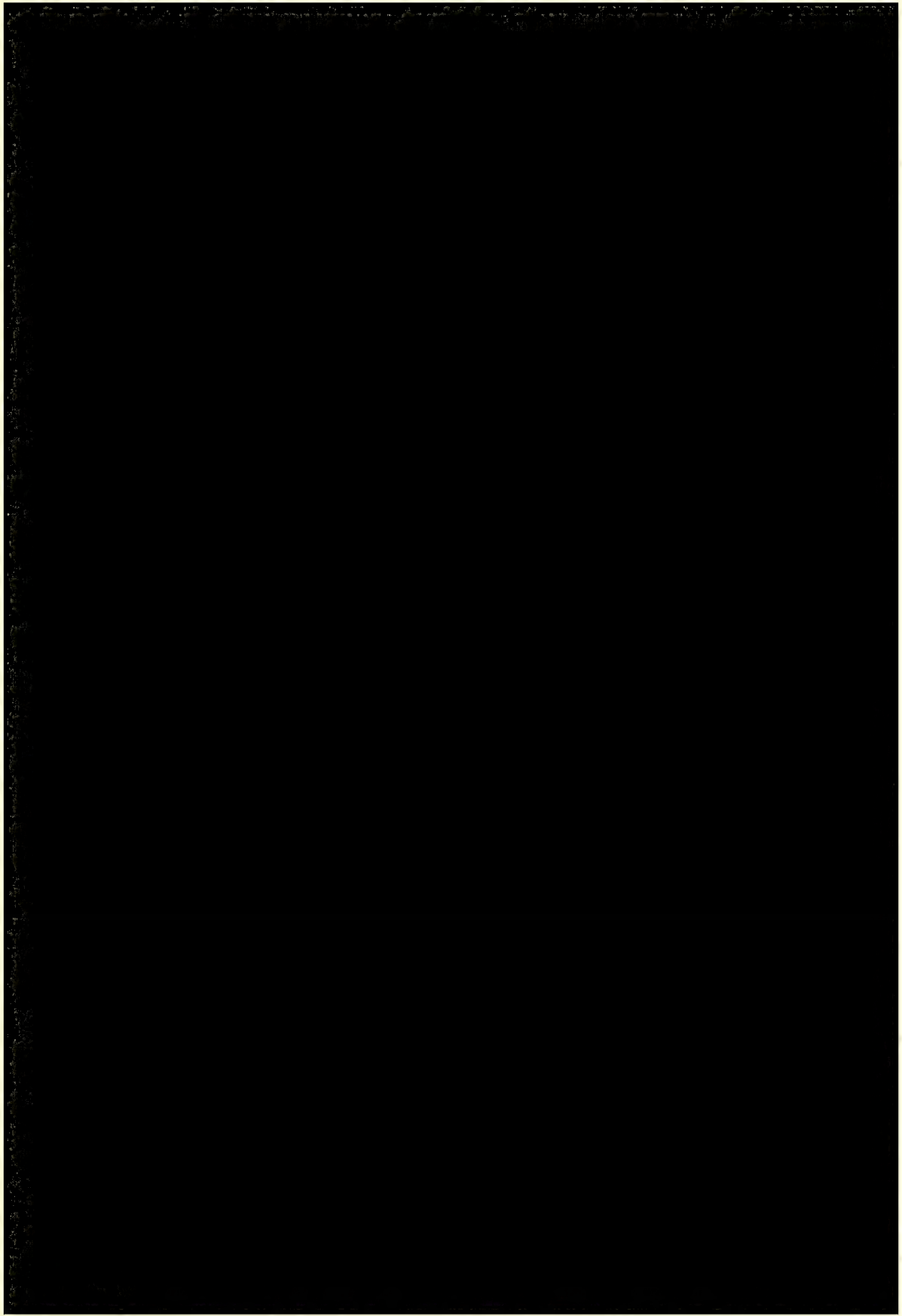


FIG. 346.—Rodiya girl (Ceylon). (Photo, F. Heger, Vienna.)



The shape of the areola is generally circular, but the manner in which it forms a part of the breast is varied and full of individual differences. M. Bartels distinguished :

(1) *Disc-shaped Areolæ*. These are the prevalent form among European women. They may be slightly raised as though the nipple rested on a tiny plate or boss, circular in shape, and raised a couple of millimetres, from the elevation

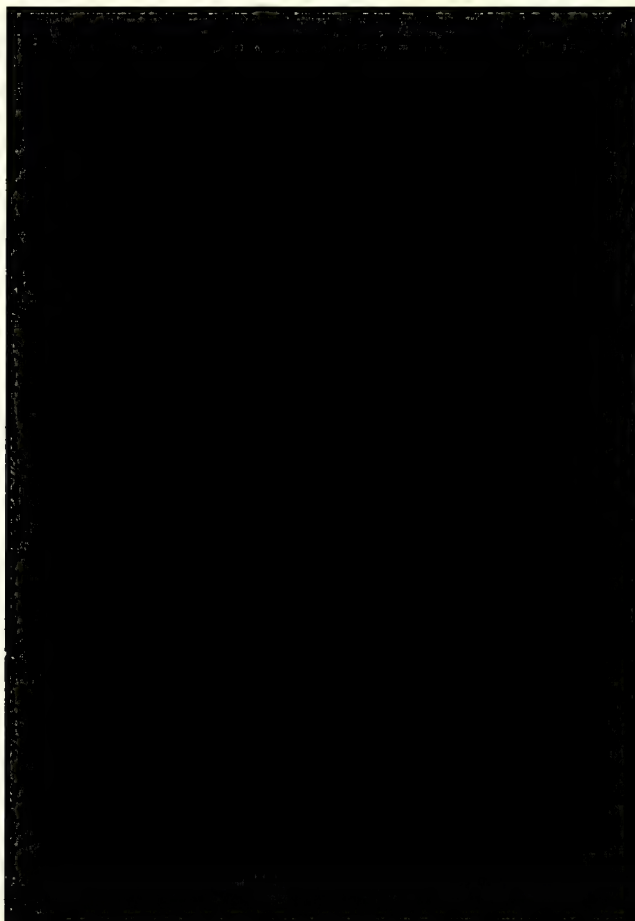


FIG. 347.—Case of unusually prominent rounded nipples, Natal. (After Joest.)

of the breast. Such raised areolæ are found with a certain frequency among Spaniards and Sicilians (*cf.* Fig. 345).

(2) *Cup-shaped Areolæ*. In certain coloured races the areolæ are segments of a sphere which is added to the larger hemisphere of the breast itself. The young girl of the white race passes through this phase of formation in her development from the puerile to the mature stages of growth. This form of areola may be large or small according to the individual.

(3) *Hemispherical Areolæ*. It may be that the curve of the areola does not correspond with that of the breast beneath it and may form an independent protuberance with a sharply defined ring-shaped border. A. Bloch, in a lecture to the Anthropological Society of Paris, described this type very aptly as "*l'auréole en relief*." It is found in Africa and Oceania, and among various Arab peoples (*cf.* Figs. 163 and 346).



G. Fritsch<sup>4</sup> drew attention to the prominence of the areola as an ethnic characteristic. He says of the women of the Ama-Xosa: "The nipple is not so developed and prominent as in Europeans, but the whole areola projects beyond the mammary elevation, having the papilla in its centre. The child, when suckling, takes the whole areola between its lips like a sponge rather than a nipple."

(4) *Almost Spherical Areolæ*. These are an exaggeration of the last-mentioned formation; the basis of the areola, where it meets the main portion of the breast being smaller than its greatest circumference. Krämer calls this the bottle-gourd



FIG. 348.—Breast of gourd type (New Guinea). (After Neuhauss.)

form (Fig. 347; cf. Pl. II in "Negro Types"). Among the most marked examples of this formation are the Papuan girl from New Guinea, photographed by Neuhauss (Fig. 348), and the Vedda woman from Ceylon (Fig. 349), in whom there almost appear two sets of mammæ, the upper being the areolæ.

[The evidence is not satisfactory enough, I think, to justify the inclusion of this areola among the recognised types. It is very rare, and I have doubts as to its normal character. Fig. 348 shows a girl of 20 from Quampu at the foot of Cromwell Mountain in New Guinea. The breast may be said to be of the bottle-gourd type, but the areola is not over-developed, as can be seen from the right breast. Moreover, the example from Ceylon (Fig. 349) cited in the text does not illustrate Krämer's type. It is certainly unusual and anomalous.]



### 3. THE FEMALE NIPPLE

In normal cases the nipple should rise up from the centre of the mammary gland. This natural formation, however, is injured or impaired in many young girls by tight and unhygienic clothing or (in the past more than to-day) by tight



FIG. 349.—Unusual form of nipple in a Vedda (Ceylon). (Photo, Saraisin.)

corsets, which constrict the breasts and flatten the nipples into their surface so that there may be not only a flat surface but an actual depression.

The total obliteration of both nipples has been recorded in one case by Kleinwächter<sup>3</sup>:

The individual in question was a well-developed girl 23 years of age, of completely normal femininity in her general physique, but she had never menstruated and internal examination



showed incomplete development of the genital tract and the labia, though the pubic hair was normal in amount and arrangement. Her breasts were of normal size for her years, but there was no nipple on either breast. On both sides was a rosy pink areola about as large as a florin, quite level with the surrounding skin, and there were no orifices of lacteal ducts or any such indications. This case is of some significance, for in other cases of pronounced infantilism of the genital tract, both breasts and pubic hair are very slightly developed as a rule. But in this girl the breasts probably consisted wholly of adipose tissue without glands and ducts. Thus, we have another proof that well-proportioned breasts do not necessarily imply the presence of normal glandular arrangement.

In the majority of women, however, the nipple rises from the areola, though even before pregnancy and lactation have left their traces there are very great



FIG. 350.—Phalangeal form of nipple, Guiana.

differences in its shape. We shall deal in a later chapter with these effects of pregnancy and lactation, and refer here mainly to the differences between nulliparæ.

M. Bartels has suggested the classification of mammillary forms into the conical (or cylindrical) or the circular (boss-shaped); the latter may be either flat or hemispherical.

If the last-named type is an extreme example, its base may appear constricted and thus an almost spherical mammilla may crown a globular or projecting areola, as described in the previous section (*cf.* Figs. 351 and 352). Another form is cylindrical or conical, and if the length is much greater than the basic diameter, we have a nipple which resembles a finger joint (*cf.* Figs. 353 and 354).



The size of the nipple, according to Max Bartels, has the following distinct gradations :

- (1) Depressed.
- (2) Flat or obliterated.
- (3) Small.
- (4) Moderate.
- (5) Large.

Regarding shape, the same authority distinguished :

- (1) Imperceptible, merging into areola.
- (2) Boss-shaped or knob-shaped.
- (3) Low cylindrical.
- (4) Hemispherical.
- (5) Conical.
- (6) Phalangeal.\*

Hörschelmann has made a careful anthropological study of the Esthonian woman and his classification is more detailed :

- (1) Prominent and knob-shaped.
- (2) Flat and knob-shaped.
- (3) Small button-shaped.
- (4) Conical.
- (5) Phalangeal or cylindrical.
- (6) Bifurcated with a longitudinal depression or a central "dimple."
- (7) Retracted or depressed.†

He deals in some detail with mammillary furrows and depressions. He says :

"I was at first inclined to attribute these irregularities to the pressure of clothing, especially of the upper rims of corsets, but I became convinced that there must be other reasons when I found the dimples and furrows in young Russian girls from the fishing villages on Lake Peipus where corsets are wholly unknown. The real cause is a form of arrested development, for mammillary furrows and depressions are generally found in very young persons together with the very flat shapes and small sizes. These develop later and merge into other forms in the older girls and in multiparæ. The case of the deeply wrinkled nipples (called, in German popular speech, *Dornenbrüste*) is quite different. I saw very few such irregularities on the nipple among the Esthonian peasant girls, but many more among the German women in Livonia. It is possible, but not certain, that the pressure of tight clothing has some influence here. The exact opposite of this furrowed nipple is the dainty, conical tip which seems to belong to very highly organised individuals (and races ?). In itself, it is rare ; among the Esthonian nulliparæ, I found it in not more than 10 per cent. But this percentage increased greatly when observations were limited to the physical *élite* among them. In one year, I found this conical type among 15 out of 20 of the most comely and attractive girls. Among the prostitute class it did not appear once.

The primitive looking phalangeal form increases in percentage in the older women ; but is always rare in nulliparæ and only frequent among multiparæ and the middle aged. In early youth, the only girls with nipples of phalangeal type were of heavy, plain, and rather coarse appearance.

\* [It would appear that in discussing these various types of nipple it is understood that the nipple in its ordinary condition is being considered and not the same in erection. An almost flat nipple may become conical or even phalangeal when erect. This condition increases the difficulty of classification and should not be overlooked in future inquiries. For an account of the mechanism of erection in the female breasts, see Schumacher.]

† [It is not generally realised that the medical man distinguishes between a *retracted* and a *depressed* nipple. In the former case contraction takes place from within, *retracting* the nipple : in the second the nipple has not even projected in the normal manner.]



The retracted nipples are those which lie beneath the level of the surrounding areola as though in a cavity. According to M. Duncan, in the pregnant, they are the result of lactiferous engorgement in the case of some women. Fitzwilliams, who speaks of 'inverted' or 'umbilical' nipples regards this as due to some abnormal condition in the muscular tissue in and around the areola."

It is regrettable that exact and reliable data are so rare as to be almost unavailable as regards the shape and size of the breasts in women of coloured races. There



FIG. 351.—Hemispherical nipples, Igorrot. (Mus. f. Völkerk., Dresden.)

are indications, however, that more attention is being paid to these matters, whilst in the case of Europeans some useful results have already been obtained.

For example, Dr. Fritz Rothe carried out investigations and recorded measurements on the material which his professional work in Luckenwalde (Mark Brandenburg) offered him. The number of individuals studied was 1000, and the work was done fairly thoroughly and we shall refer to his comprehensive results in the following section. There is also the dissertation by Hörschelmann, who worked at the Institute of Anatomy, Dorpat. Some of Martin's pupils have also done anthropological work on the breasts: thus, Sara Teumin measured Russian, Polish and Jewish women, and Dina Jochelson-Brodsky did the same for members of various North-Eastern Siberian indigenous tribes. Among the points noted by them, we may mention the absolute and relative distances between the nipples and their distance from other bodily regions and points. When the preliminary data are completed, we may perhaps find racial





FIG. 352.—Hemispherical nipples, Tinguiane, Philippine Islands. (Mus. f. Völkerk., Dresden.)

characteristics in certain of these measurements. Finally, and working on lines devised by himself, M. Lipiez, with 340 cases, has represented and depicted the evolution of mammary structure both absolutely and in relation to the whole development of the feminine organism at puberty; and came to the conclusion that the breasts take a longer time to develop their full maturity than the other sexual characteristics, beginning earlier and terminating later.



Menstruation set in in every case between 12 and 16, whilst the development of the breasts continued till 18.

The population of the European Continent has been sifted to and fro, and in the course of time has been so thoroughly intermingled that no nation can now justly claim purity of racial descent. History has sought in vain to distinguish the genetic components of these various national blends, for crossing began centuries before recorded history. It is the task of anthropological science to come to the help of history. The investigation and comparison of shape of skulls, colour of skins,



FIG. 353.—Bari woman. (After Friedenthal.)

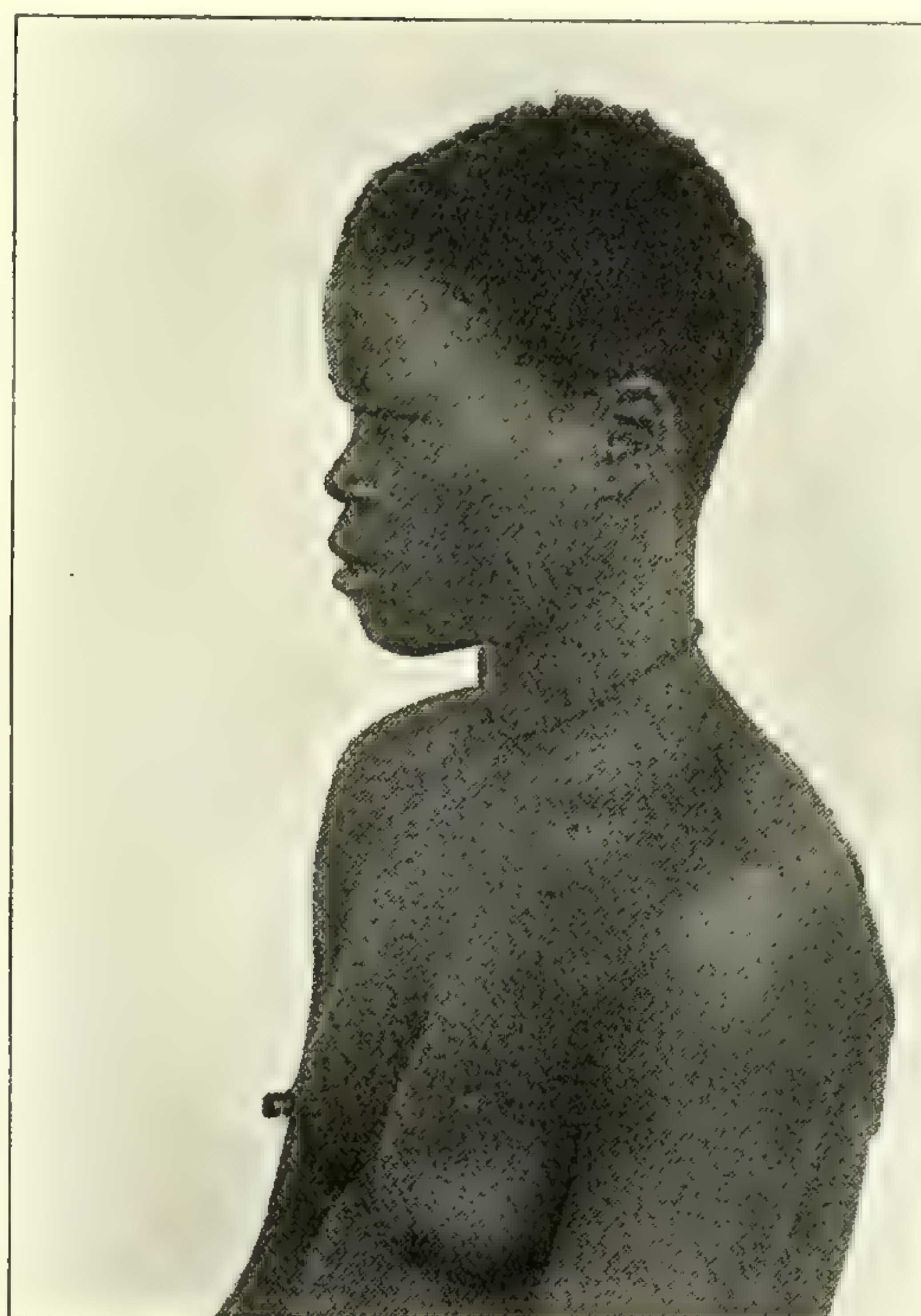


FIG. 354. Loango negress with nipples of phalangeal type. (Photo, Falkenstein.)

hair, eyes, and especially and most recently, of blood groups, have already extended our knowledge and stimulated our enquiries.

Thus we are, perhaps, already in a position to maintain that there are genuine and definite racial characteristics in the breasts of women.

#### 4. THE BREASTS OF EUROPEAN WOMEN

We must now again refer to the investigations and results of F. Rothe, who studied the breasts of 1000 women of North German nationality. His results may be said to form a basis for comparison with other anthropological and anthropometrical material. Rothe's investigations were begun at Max Bartels' suggestion and based on the divisions and definitions first suggested in an earlier edition of the present work.

The women studied by Rothe belonged to a somewhat limited group. Slightly over three-quarters of the total number were Brandenburg Prussians by descent ;



the remainder came from other provinces of North Germany. Rothe carefully noted stature and complexion in all cases, as these may give indications of other ethnical mixtures. Moreover, he also recorded whether the women had had children and if so how many, also the number of lactations, social status and profession, age and nourishment. Thus the investigator carefully avoided the risk of attributing sociological results or the effects of age to racial factors only, as well as obtaining facts relative to sociological and functional influences.

We will first summarise Rothe's results as to the structure and shape of the breasts.

8.3 per cent. of these women had bowl-shaped breasts; 16.2 per cent. cup-shaped, 51.2 per cent. hemispherical, 21.4 per cent. conical, and in only 2.9 per cent. were there examples of the "goat's udder" type. The determinant factors, according to Rothe, are primarily age and nutrition, whether sufficiently or under-nourished; and then the influences of pregnancy and lactation. The hemispherical breasts are those of well-fed youth, unaffected as yet by the changes of pregnancy and lactation; the disc-shaped, flat breasts are those of underfed women; and the conical form is attributed to repeated maternity or to excessive malnutrition or its reverse.

There is a curious correlation between shape and colouring in one respect: the goat's udder shape (2.9 per cent.) was found mainly in women with light hair and eyes (that is in 82.76 per cent.), while 13.9 per cent. were light haired and dark eyed, and only 3.45 per cent. dark in both eyes and hair).

The size depended mainly on the condition of nourishment, which even masked the effect of pregnancy. As a rule, the breasts of parous women were smaller than those of women who had not borne children. This was an unexpected result, which Rothe believes due to the better nutritive state of the women who had not been mothers. On the other hand, the material shows the influence of lactation in enlarging the breasts in an unmistakable manner.

The correlations with stature and colouring are significant, though less frequent.

Three hundred and twenty-seven women out of the total 1000 are described as tall in stature; of these 15.6 per cent. had very highly developed breasts. Among the 549 women of middle height, these full breasts were found in 10.93 per cent. and in 8.87 per cent. of the 124 small women. The "full" and "moderate" types of development did not vary much with general bodily height, but small or flat breasts were much the most frequent among small women (28.23 per cent.), although some of these women may have been immature.

The correlations between sizes and complexions are as follows:

The women with fair hair and dark eyes had the largest percentage of the most highly developed breasts: *i.e.*, 13.48 per cent. Then in order came the fair haired and light eyed—12.63 per cent.; the dark haired and light eyed, 10.72 per cent., and the dark haired and dark eyed, 8.25 per cent.

Of the breasts of "full" type—the second grade of size—the fair haired and light eyed women had the largest percentage—57.75 per cent.; the light haired and dark eyed, 35.96 per cent.; the dark haired and light eyed, 35.71 per cent.; and, finally, the dark haired and dark eyed, 29.90 per cent. The moderate size was most common among the dark haired and dark eyed women—43.3 per cent.; next among fair haired and light eyed—34 per cent.; next among the light haired and dark eyed—32.58 per cent.; and, finally, among the dark haired and light eyed—17.86 per cent.

The overwhelmingly greatest frequency of small flat breasts was among the women with dark hair and light eyes—35.17 per cent.; then follow the dark haired and dark eyed with 18.35 per cent.; then the fair haired and dark eyed with 17.98 per cent.; and, finally, the fair haired and light eyed had this formation in 15.64 per cent. cases.



We may conclude that functional and sociological influences are complicated by congenital factors affecting the whole individual organism. Tall women had, as a rule, the largest development, and those with fair hair accompanied by light coloured or dark eyes had larger breasts than those with dark hair and light eyes, and above all those with dark hair and dark eyes. These results are not due to chance, but are probably largely ethnical and racial.

The texture and firmness of the breasts depend primarily on functional experience ; that is, on gestation and suckling. The breasts of a mother gradually tend to lose the erect elasticity of youth.

Rothe's statistics show no special correlation between colouring and consistency ; and he makes no special sub-division between mothers and nulliparæ in the figures as quoted. In order to obtain results correlating the general pigmentation and consistency of the mammary glands, nulliparæ only should be considered.

The nipples showed considerable variations in size, which are mainly, no doubt, due to pregnancy and suckling, but appear also not unconnected with general colouring. As a rule, women with light eyes had more developed nipples than dark eyed women, but both the largest individual nipples and the smallest number of little nipples were found among women with fair hair and dark eyes.

Their structure was, of course, mainly affected by lactation, which not only enlarges the mammillæ but alters their shape, making the conical form more boss-like or even phalangeal.

In the following sets of figures, the first (*a*) refers to women who have not borne children, the second (*b*) to women who have borne but not suckled them ; and the third (*c*) to women who have both borne and suckled.

	Percentage.		
	a	b	c
Knob-shaped . . .	31·0	52·0	62·0
Cone-shaped . . .	57·0	38·0	27·0
Low cylindrical . . .	30·0	7·9	2·7
Phalangeal . . .	0·89	1·5	7·36

The colour of the nipples varied as follows : red in 30 per cent., dusky brown in 27 per cent., reddish brown in 20 per cent., rose pink in 15 per cent., and pale brown in 6·7 per cent. The paler shades predominate up till 18 years of age ; pregnancy darkens the nipple but, apparently, lactation turns the colour paler again. There seems to be some connection with general pigmentation, for the red and pale shades are more frequent in blonde women and the brown in dark women.

The areola is greatly increased in dimensions during pregnancy, but not, according to Rothe, by the subsequent lactation. On the contrary, he formed the opinion that parous women who had not nursed their children had much oftener exceptionally large or normally large areolæ than mothers who had nursed. Moreover, the areola expands with middle life. In the fair haired women, the large and exceptionally large areolæ were much more frequent than in the dark haired, whose areolæ were generally of moderate or small dimensions.



In shape the areolæ were classified as follows :

Disc-shaped, 61.8 per cent. ; bowl-shaped, 33.3 per cent. ; hemispherical, 4.9 per cent. ; spherical, 27.4 per cent. The bowl-shaped and the hemispherical nipples are those of youth, whilst the disc-shaped is that found in maturity and in advancing years. The spherical type of areola is almost exclusively found in quite young persons ; 50 per cent. of those with this formation were in their 15th year ; and from 45 to 47 per cent. between 16 and 19 ; about 30 per cent. of the cases between 20 and 25 ; very few over 30, and none over 45. Moreover, the spherical areola occurred more often in blondes than in brunettes.

Age influences the pigmentation of the areola and gestation and lactation deepen its hue. Dark complexioned women have, naturally, more often dusky areolæ, but on the whole general colouring does not seem to influence the areolæ to any great extent.

[A more recent series of observations of the breasts were made by Amalie Rhiel on Freiburg students between 17 and 33. One hundred and eighty-three were examined, and of these 45.86 per cent. exhibited firm erect breasts ; 8.3 per cent. possessed breasts which could almost be termed erect ; 23.68 per cent. had breasts inclined to sag ; and 22.65 per cent. had definitely pendulous breasts. In 8 cases the left breast was lower than the right. Measurements were attempted according to the method recommended by Martin (*Lehrbuch*, 198), and an approximation as to size is given. Eleven cases had very small breasts ; 29 small, 89 moderate, 42 large, and 4 very large. The nipples showed the usual variations. In 32 per cent. these were flat ; in 17.71 per cent. conical ; in 12 per cent. cylindrical ; in 20 per cent. low conical ; in 11.43 per cent. low cylindrical ; and in 6.86 per cent. a mixed form between conical and cylindrical. The goat's udder type is not mentioned.]

In their studies of American college students Wilder and Pfeiffer made no attempt to classify the breasts, and it is probable that the majority of the measurements were made upon subjects clad in bathing suits (*cf.* p. 453). This method, we are told, "often renders feasible an extensive study of anthropometry involving both sexes."]

Up to the present we have very little material observed and recorded in a competent and reliable manner even as regards Europe alone, with the exception of these studies of Rothe and Hörschelmann's work in Esthonia.\* Thus we have to fall back on the vague and general impressions of travellers and others.

Rothe's statistics prove what was already known in a general way, namely, that there are national and racial differences in Europe in this respect. Even in Germany and throughout Central Europe, for instance, shape and size of the breast vary from province to province, and stock to stock, quite apart from the influence of custom, diet and costume. Anecdotal material is abundant here. For example, in Silesia it is said that the bosom is generally flat and undeveloped, whereas in Mecklenburg on the Baltic shore and about Würzburg on the Rhine, and in Vienna, even quite young girls are said to possess finely shaped and fully developed breasts ; indeed, Austrian women have always been famed in this respect as the old rhymes testify. The Slavonic woman is said to develop earlier than the Teuton in this respect, but we have, so far, no means of proving this. The Croatian, the Dalmatian and other Yugo-Slav women and girls are celebrated for this particular charm, both in form and firmness. The women of the old Serbian kingdom were said to

\* [Alette Schreiner made no comparative study of her Norwegian types, neither did Wilder and Pfeiffer in their study of American women.]





FIG. 355.—Small nipples in a young Sicilian.



possess breasts of only moderate fullness. In Bulgaria, curiously enough, large breasts were considered ugly, and there were curious superstitions as to their cause. Girls are sometimes forbidden to sweep the threshold of the cottages lest their breasts become larger. Hörschellmann states that among the Esthonian women full contours are twice as frequent among them as moderate development or flat chests. This is caused, he thinks, partly by muscular hard work, partly by the fact that they are constantly nursing at the breast. "In Esthonian women we find 80 per cent. hemispherical, 8 per cent. bowl-shaped, and about 10 per cent. conical. The goat's udder formation is very rare." [According to Krauss<sup>5</sup> some of the southern Slav women have such large and pendulous breasts that they can fling them over their shoulders (*v. p. 399*).]

Hyrtl was of opinion that climatic conditions influence mammary development



FIG. 356.—Women from Tanganyika Territory.

and that the breasts of women in dry and arid mountain regions never attain the dimensions common in fertile and marshy low lands. But this pronouncement may have been based upon, or influenced by the type of physique portrayed by Rubens and associated with his name. And these Rubens women were not by any means always or necessarily daughters of the Netherlands.\* The study of contemporary documents and of the history of art has been able to identify the models who sat for various pictures by this artist. Their names and nationality are known; they were Parisians, and we may conclude that their rounded contours express the taste of the age rather than the characteristics of any particular racial stock.

Admittedly, however, grace and symmetry are supposed to characterise the

\* [The preference for the robust types, as are depicted not only by Rubens but by modern painters like William Etty and William Mulready, indicate a tendency to emphasise femininity as opposed to any approximation to the masculine. Zorn's superb Swedish peasant types illustrate this point and the scorn of D. H. Lawrence for the boyish women of his time is well known (see Park and Gregory).]





FIG. 357.—Sicilian with hemispherical breasts and areolae.



physique of the Parisienne and they are credited with well-formed breasts which are neither flat nor over-developed.

It has been assumed, perhaps too readily, that the Southern European women of Mediterranean race attain physical maturity earlier than the girls of Northern or Central Europe, and possess fuller and more highly developed breasts. It has, however, been maintained that the Castilian women have the least developed breasts in Europe and the Portuguese the fullest.

The photographic material available is largely from Barcelona and represents women in whom breasts, hips and buttocks are alike full and well-rounded. Several of these Spanish women show another peculiarity which is undoubtedly frequent in, even characteristic of, certain coloured races. The whole areola is raised above the surrounding and supporting breast and curved into a second miniature elevation separated by a sharply defined ring-shaped circumference.

M. Bartels observed the same appearance in several Sicilians (*cf.* Figs. 344 and 357). These characteristics have not been demonstrated in other European races and, as they are quite common and indeed typical among Africans, it may be that the admixture of African blood is responsible for their appearance on the north of the Mediterranean. Both Spain and Sicily were in constant communication with North Africa from very early times. It may be observed, however, that the breasts themselves are only moderately developed among Sicilian women. Similarly, only slight development is generally found in the aristocratic British types.

## 5. THE BREASTS OF AMERICAN WOMEN

The North American women of European descent have the characteristics of their original nationalities modified by American climate and habits of life.

In considering the aboriginal and mixed races we shall begin with the southern extremity of the Continent.

The Peshere women of Tierra del Fuego are said by Essendörfer to differ widely from the men of their tribe who are generally thin, for they have rounded figures and full breasts. This description was confirmed in the Tierra del Fuegians who came to Berlin, as Virchow<sup>2</sup> observed that these women had very full breasts but not disproportionately or unpleasantly so, and they were of the slightly pendulous type with large but well proportioned nipples pointing downwards.

Hyades and Deniker wrote :

“The breasts are set rather high. In young girls they are rounded, slightly conical in shape and erect. After some years, and especially after several births, they become pendulous, but remain somewhat conical rather than pear-shaped. As a rule, the breasts of the Yaghan women in both shape and setting resemble those of the Araucanian Indian women and differ much from those of Mongols.”

Kupfer says of the Suyá women (Matto Grosso, Brazil) : “The younger women have small firm breasts running rather to a point at the tips, the more mature have full breasts which are not unshapely.” But on the whole the Indian women of South America are as much subject as other primitive coloured races to the gradual elongation and disfigurement of the breasts. For example, v. d. Steinen says that those women of the Bororo (Brazil) who have borne children have very pendulous breasts with large areolæ.

In Chile, and equally in California, the experience of child-birth affects the breasts in the same manner as among Europeans, according to Rollin, the surgeon



in the expedition of La Pérouse. Schomburgk gives a similar account of the Warrau (Guarauno) women in British Guiana.

M. Bartels was able to photograph some natives of Guiana; a mother in her 'twenties had large, flaccid and pendulous breasts; a girl of 13 showed the early swelling of the hemispherical type, whilst a girl of 19 exhibited conical breasts with hemispherical areolæ and prominent nipples of the same shape (Fig. 212).

Rengger describes, as a peculiarity of the Guarani women, that the areola is raised and curved above the rest of the gland, and the same is seen in the photograph of an Indian woman from the State of Arizona (Fig. 358).

In Koch Grünberg's monographs he gives very full illustrations of South American Indian tribes.

Sartorius states that he saw native women in Mexico with almost conical breasts, and it is said that Eskimo women have well developed breasts also.

## 6. THE BREASTS OF AFRICAN WOMEN

Turning to Africa we find among the Egyptian women, according to Hartmann's<sup>6</sup> account, breasts oval in shape and firm in consistency, but which soon become pendulous after repeated pregnancies. In girls they are often well developed as early as in the 11th year and in women they often become pendulous between 25 and 30. The women of Upper Egypt seem to have been celebrated in antiquity for the size of their breasts, for Juvenal writes, "quis [miratur] in Meroe crasso maiorem infante mamillam" (who marvels to see the breast of a mother in Meroe larger than her sturdy baby)? \*



FIG. 358.—Indian woman from Arizona with elevated areolæ. (R. Neuhauss, photo.)

The girls of the Sudan, according to Hartmann, show a good deal of diversity. "Many have a graceful, firm, delicately formed breast of soft texture, when young, hemispherical in shape, sloping more gradually above and more steeply below with curved areolæ and with short nipples. More frequently the breasts in young women of the Sudan are more or less conical in shape and slope outwards. The areolæ are globular while the nipples remain insignificant (Fig. 359). This is not the most æsthetic form and becomes less so when the breasts wither and become pendulous. As a result of much child-bearing, breasts may become shrivelled, and wrinkled flaps of skin are all that remain. Other girls in their youth have broad chests and high-set, full breasts. But these, too, become misshapen, flat and disfigured." Hartmann

\* Sat., XIII., 163. Cf. T. Bell, p. 76.



found very pretty and attractive figures among the women of Northern Africa. In a few cases the breasts develop between 15 and 16 years of age. "The goat's udder shape, so praised and prized among the Arabs, is really only æsthetically displeasing to Europeans if it is too large and pendulous. To a moderate degree and in small dimensions, it harmonises with the

slenderness and daintiness of the build common among those girls" (cf. Hartmann,<sup>10</sup> who gives illustrative material in his book).

Hartmann, however, saw none of the flaccid, tubular and elongated breasts elsewhere so frequent in Africa: the young Dinka girls were sometimes of classic beauty in outline, but the mothers much less so.

Among the Nuba, a mountain people of Kordofan, the disfigurement began early; the breasts were elongated, with deeply wrinkled areola, and the nipples became hard and horny. Among women in Sennaar Hartmann observed and recorded hemispherical breasts and sensitive nipples of great beauty, among the younger women.

Brehm mentions another African tribe, the Mensa (Eritrea): in these women, the breasts begin to develop between 10 and 12 years old and are disfigured and deformed by 30. Juan Maria Schuver mentioned the curious colouring of the nipples among the Galla women: they were bluish, becoming a bright indigo with advancing age. Paulitschke considered full and finely shaped breasts characteristic of these Galla. According to Nachtigal the breasts of the Tibu women of eastern Libya soon become flaccid and the lack of adipose tissue causes mere empty folds of skin to take the place of finely formed breasts. Fortunately, in their latter stages they are never very voluminous and do not hang down far.

Similarly it is stated that the breasts of the Egba women in Yoruba are unusually large, but after the first pregnancy they wither and in old age become mere bags of skin. Cases are also known where one breast only shows full development while the other is scarcely apparent.

Lanessan states of the Pai-Pi-Brior Agni, who are neighbours of the Ashanti:

"That in youth the breasts are generally piriform, becoming very flaccid, long and pendulous in later years. The hemispherical form is very rare and is considered a sign of beauty" (Figs. 260 and 360).

Pechuel-Loesche gives a description of the characteristics of the Loango negresses:

"They are naturally lean and thin and seldom obese; they have well-proportioned breasts, hard and coarse in young persons. They are rather conical with too narrow a base for their



FIG. 359.—Negress from the Egyptian Sudan with conical breasts and round nipples. (Photo, G. Schweinfurth.)



height (or length) and sometimes they are udder-like; asymmetry is frequent. They soon become the sagging pouch-like disfigurements so often found in Africa and far from unknown in other continents and civilised races. The breasts of broader base and of hemispherical form are the more enduring and often a real adornment even in very mature women; in the young, their only fault is the somewhat large nipple."

Falkenstein<sup>2</sup> confirms this description, adding that the hemispherical form is very rare and the areolæ and nipples very marked.

De Rochebrune reports that the breasts are generally piriform among the Wolof; and Béranger-Feraud comments on the disfigurement that follows maternity in this people.

Hutter mentions the conical and elongated breast formation of the Bali negresses of Cameroon, and their early flaccidity. In young girls there is often great beauty of shape and firm texture. He records one marked case of asymmetry.

Paul Reichard says of the Wanyamwezi that the breasts begin to develop at seven years and to sink at 13.

"It has a smaller base than in women of our race and the nipple and areola are so formed that the appearance is as if a second breast was set on the first."

The Hottentots and Bushwomen—in addition to their other physical peculiarities—have been described by various travellers. Lichtenstein says these people have flaccid and pendulous breasts, while Fritsch<sup>4</sup> found the shape of the breasts of the Hottentot women more like the European. They have relatively small and pointed breasts with prominent nipples and fairly flat areolæ, and not the large elongated type of breast which is elsewhere common. Barrow also mentions their large and prominent nipples and areolæ. With regard to the breasts of the Bushwoman, Afandi, who died in Tübingen, Görtz states that these were not pendulous. The areolæ also were not similar to those of the Hottentot Venus on whom Cuvier reported. In her case the areola measured 4 in. across and was provided with radiating wrinkles. In the Tübingen case the woman's areola measured  $4\frac{1}{4}$  in. across but the furrows were concentric. The nipple also was



FIG. 360.—Ashanti girl of 16 years, whose breasts are already pendulous. Cf. Fig. 260 for view from behind. (Photo, C. Günther, Berlin.)



projecting and not retracted as in the case of the Hottentot. It was separated from the areola by a surrounding furrow.

The very strong development and large size of the breast in native girls of



FIG. 361.—Young girl from Natal with pendulous breasts.

South Africa has often been recorded photographically. Their breasts tend to sag even in very young persons (Figs. 361 and 362).

In the interior of the island of Madagascar there dwells a primitive tribe which Audebert has described. The young girls had firm, round and shapely breasts with somewhat developed nipples of black colour. The degeneration and sagging of the breasts in mature women resulted from prolonged suckling of more than one child at a time, not only the youngest but such children as were old enough to reach the mother's breast while standing.



## 7. THE BREASTS OF THE WOMEN OF ASIA

Apparently the northern latitudes of Asia—like those of Europe—favour the preservation of youthful conditions and appearance in the female breast. Steller says of the Kamchadale that they had :

“ Small round breasts, quite firm, even in women of 40, and which do not become pendulous early in life.”

Polak describes the Persian women as being only moderate, but early, in breast development, or less than moderate. The breasts of the Armenians are much larger and fuller. The Persian is supposed to be an excellent wet nurse, which is another proof that functional capacity of the mammary gland is quite independent of the size of the breast. In fact, very full breasts are not considered the most adapted for lactation. Persian women wear a suspensory bandage to support the breast with separate embroidered pouches (Polak and Hantzsch), and avoid tight and heavy clothing.

Hodson mentions the long nursing period and hard work of the women among the Naga of Manipur ; women in their thirties look like old women. P. and F. Sarasin have some notes on the Veddah women of Ceylon. They found the breast conical in the young women, with phalangeal nipples and large areolæ. In two cases the areola formed a second smaller elevation, conical in shape. The breasts become flaccid after very few births and are obliterated in age. They record two marked cases of asymmetry in which the left breast was under-developed.

Jacobs speaks of the protuberant areolæ found in “ more than half of all the women of Bali.” It “ forms a little mound of its own.” Women who are nursing are especially noticeable in this respect. [For beauty in Bali cf. G. Krause and H. E. Yates.]

Among the Achinese (Sumatra), Jacobs<sup>2</sup> found two different main forms : either round and spherical, or pointed. “ The natives have special terms for each : *těk broěk* (or half a cocoanut shell), and *těk djantoeng* (heart of a pisang flower). The first form is preferred by the young men.

According to Müller,<sup>2</sup> the breasts of Malayan women are small, pointed and conical and the chest otherwise flat. But Finsch<sup>2</sup> says there is as much variety here as anywhere, according to age and individuality.



FIG. 362.—Woman from Natal with large pendulous breasts. (Joest Coll.)





FIG. 363.—Negrito girl from Luzon with breasts and areolæ of hemispherical type.

“Sometimes the nipple is retracted and sometimes the dark areola is very prominent showing all the grades of size and shades of colour from light to almost dark brown.”

Montano says of the Moro of Sulu :

“They have not the firm conical breasts of the native women. In the young Sulu women, the breasts are almost hemispherical but wrinkle soon and become pendulous in older women.”



Modigliani says of the inhabitants of the island of Nias :

“ During their youth, the women habitually display their breasts which are, as a rule, well shaped, erect and piriform with small dark nipples. But these natural attractions soon



FIG. 364.—Hindu woman with large areolæ. (Photo, L. Steiner.)

diminish and disappear ; and, after the first confinement, with its prolonged period of suckling and incessant household tasks, there is no trace left. The breasts sag down to the abdomen, their upper surface becomes seamed with deep furrows and no more is left of their former beauty.”

So far as illustrative material, both in works of art and in photographs, is able to prove, Japanese women have shapely breasts of moderate size.



Koganei says of the Ainu women :

"Their breast is, as a rule, either of moderate size or large, pear-shaped or conical ; and sometimes pendulous, even in women who have not suckled their babies. Only rarely is the breast hemispherical and erect. The nipple is of moderate size, or large, and more often prominent than flat. The areola only slightly pigmented and generally light or dark brown in tint."

Mondière found the breasts in Chinese women

"Admirably proportioned and hemispherical, but with a strong tendency to become overloaded with fat and of excessive size between the ages of 25 and 28.

"The indigenous women of Formosa, in the southern portion of that island, are as unsightly to European eyes as their menfolk, being also as small and frail in physique. They have undeveloped breasts, small and conical."

The traveller, Ibis, who thus describes them, only saw a few more shapely forms among certain of the aborigines.

Mondière gives the following description of the Annamese women :

"Their breasts are generally symmetrical and hemispherical in shape ; the piriform type is rare, and, curiously enough, the women who have it are generally whiter in complexion than the rest. In the young nullipara, the distance between the nipples is generally 19 cm. These are small before adolescence, and then expand greatly during gestation, becoming very prominent in the later months before birth. The areola varies much, individually, but the paler the woman's skin, the larger and more highly coloured her areola. Its diameter, as I have been able to measure occasionally, may reach from 7 to 9 cm. The mamilla remains short till suckling begins, then it increases rapidly and remains prominent and deeply pigmented after the first long period of lactation. The breast seldom recovers its original shape as is the case in many women of white race, but it decreases in size and droops without becoming disfigured or unsightly."

Mondière found that a half-caste between Annamese and European resembled her Annamese mother in this region, but that her nipples were more prominent.

Maurel describes the women of Cambodia thus :

"The chest is well developed with firm, elastic and generally pear-shaped breasts. The nipple is usually short." The recorder only saw two nulliparæ with uncovered breasts, and says they were "slightly pear-shaped," adding "in spite of this formation, the nipples point straight forward and are less far apart than in other women by about 16 and 20 mm."

There are certain coloured races among whom the women preserve the shape and texture of their breasts after bearing and nursing children much better than among most primitive peoples. Thus, on the North-East Frontier of French Cochin China, where the borders of Annam, Cambodia (Siam) and Cochin China meet, there lives a tribe known as the Moi, of whom A. Gautier says : "Their women are generally plain featured but with good figures and full breasts, unwrinkled even after the first child."

Néis says of the Lao :

"The women never have excessively prominent breasts ; with advancing years, they become plump but not obese."

Montano reports of the Negrito of the Philippines :

"In young girls, the type of breasts is midway between the hemispherical and piriform. After the first pregnancy, they increase in size and droop downwards."

Riedel finally has given particulars about many of the Islanders of the Moluccan Archipelago :

The Buru girls have breasts of moderate size, flattish above and curved below ; after childbirth they sag and become seamed with unsightly furrows. On the Amboina Islands the



breasts are badly developed as a result of deformation in youth and the areolæ are small. On Ceram women who have not borne children have very small breasts. On the Ceram Laut, Gorong and Watubela Isles the breasts of the women are small and piriform. But on the Kei group the young women have large full breasts with prominent piriform nipples. The women of the Temimber and Timor Laut (Yamdena) Islands have small but full breasts inclined to be pear-shaped, and the same is the case on Lèti, Moa, Lakor and Kiesar, and these are small in size, with dark or black areolæ. And on the Sawu group, Riedel <sup>7</sup> states that the breasts are small and of the piriform type.

## 8. THE BREASTS OF THE WOMEN OF OCEANIA

From Indonesia and Malaya we pass to the inhabitants of the Pacific Islands, among whom the hemispherical areola seems particularly frequent ; and this rounded areola is separated from the breast itself by a circular depression (Fig. 365).

Kubary found highly developed, but somewhat conical, breasts among the women of Yap (Caroline Islands), and this corresponds with the comments of v. Miklucho-Maclay on the inhabitants of other South Sea Islands. He says :

"In girls of from 12 to 15 who have borne no children, I found the peculiar formation already mentioned by me. The upper extremity was separated from the somewhat taut, firm, youthful base of the breast by a circular depression. I saw this formation in Papuan girls in New Guinea and in young Polynesians in Samoa. The mammary asymmetry which is far from rare, seems almost the rule as regards the areola. I have always found this depression to be more marked in one breast than in the other. The formation is not universal, but very frequent. I do not think it is directly connected with periods of genital activity such as menstruation and pregnancy, but I think it disappears after frequent suckling, for I never saw this depression of the areola among older women."

The women of Ponape of the Eastern Carolines are described by Finsch <sup>1</sup> :

"The girls' breasts have faultless contours, softly rounded, hemispherical, firm, without excessive fullness and only pendant in women who are actually suckling infants. The development of the nipple is very diverse, sometimes the dark areola is especially prominent, sometimes only the nipple itself is erect. In some young girls about puberty, the nipples are retracted or they are asymmetrical. In girls with full breasts where the areolæ are constricted but prominent the nipples are sometimes quite retracted."

The women of the Gilbert Island are very pretty and attractive in their youth :

Their shapely breasts are rather inclined to fullness. In girls with retracted nipples is to be seen a dark areola, the size and colouring of which vary very much with each individual. Often in young girls the dusky areola alone rises in hemispherical contour (Finsch).<sup>2</sup>

On Maiana, Finsch described the girls as

"Having small, firm breasts with somewhat darker but not large areolæ and slightly prominent nipples. In older women, the breasts become pendulous by their own weight ; the nipples were still small, but highly pigmented, like the raised areolæ."



FIG. 365.—Queensland girl, said by her mother to be 10 years of age, with hemispherical areola. (Photo, O. Finsch.)



“Melanesian women have well-developed and shapely breasts in youth, but they sag after the first child is born and nursed” (Finsch<sup>2</sup>).

The same observer noticed the girls on Motu Island :

“In one, between 13 and 14 years old, the breasts were small and dark in hue and the nipples, though also small, were lighter coloured than the surrounding surface. A 16-year-old girl, though still small, was more fully developed with fine hemispherical contours. The nipple was small though slightly projecting and set in a small dark areola.”



FIG. 366.—Young Samoan girl with developing breasts. (Museum für Völkerkunde, Dresden.)

The breasts of the Fijian girls, if they have attained puberty, exhibit, according to Buchner, a projection of part of the nipple which appears as if constricted, and thus lends to the breast a pear-shaped appearance.

The Samoan girls, according to Graeffe, have “strongly developed, rather conical breasts.” Krämer gives further particulars :

“There is much diversity in the breasts. Some are hemispherical or bowl-shaped with small nipples, and again one often sees cylindrical and pendulous forms (Fig. 366), and especially often the ‘goat’s udder’ type with conical nipples and wide dark areolæ. As the girls mature, their breasts expand and grow flaccid and drooping and there is a perceptible ribbon or fold of flesh and skin between the breasts. Or they become so much elongated that they can be thrown over the shoulder.”



Ling Roth<sup>2</sup> collected some particulars about the Tasmanian aborigines. He records a

“Well-shaped but somewhat wrinkled breast in a woman between 26 and 28 years old. A group of 20 women had very long and pendulous breasts. Two young girls between 15 and 16 had firm, shapely breasts but the nipples were too long and too thick in proportion.”

Certain Australian aborigines, both men and women, were brought to Europe in 1884 and shown in Berlin at Castan's “Panoptikon,” where many photographs were taken, and the facts are thus summarised by R. Virchow<sup>3</sup>:

“The bosom of Tagarah (perhaps between 16 and 18 years of age) is quite beautiful, virginally firm and smooth, with full hemispherical breasts, large, somewhat prominent areolæ and flat, rounded mammillæ. Yemberi is perhaps in her twenties; her breasts are full but flaccid with elongated nipples and fine wrinkles over their surface.”

## 9. THE CARE, TREATMENT AND ADORNMENT OF THE FEMALE BREASTS

In certain races we find special treatments of the breasts which are probably not without share in causing malformations or anomalies. The ancient Hebrew compilers of the Talmud believed that in girls of the wealthier families, the right breast developed earlier than the left, since they wore their shawls on the right side and thus kept the right half of the thorax warmer, thus favouring the growth of the right mammary gland. But among maidens of the poorer people the left breast developed the sooner, for they lift water pitchers with their left hand and carry their little brothers and sisters on their left arms.

We have mentioned the vain fight of the anatomist Sömmerring, and of many European doctors, against the evil of tight lacing, which deformed both breasts and internal organs. Not only civilised nations but also quite primitive races have practised a pressure or constriction which has affected the breasts in their growing phase. Other primitive peoples, again, devote special care to developing these organs with a view to nursing and suckling children.

We all know the legend of the Amazons, and shall treat of them in more detail later on in this book. But there was also an attempt at shaping and moulding the young girls' breasts by means of a special garment among the historic Greeks (Fig. 367, and see Daremberg and Saglio, II., 980 ff., Vorberg, 616).

Among South African natives the breasts are carefully treated and developed; even when the little girls are not more than seven or eight years old, their mothers begin to rub and smear their breasts with an ointment composed of grease and certain roots, pounded to a powder. They then grasp the areola and sensitive portions



FIG. 367.—Greek girl with shoulder strap (αναμασχυλιστήρ). . Terra-cotta from Smyrna. Louvre. Cf. the strophium or breast-band.



around the nipples and rub and knead them as though they wanted to tear off the whole gland. At a later stage the nipple is intentionally elongated and tied round with strips of fibre.

Holländer<sup>1</sup> reports of the Basuto women that they

“Pull and knead their breasts long before their confinements so that they may be able to suckle the children who ride on their hips.”

In parts of New Guinea the breasts of growing girls were subjected to extraordinary treatment and superstitions, as Missionary Keysser reports of the Kai

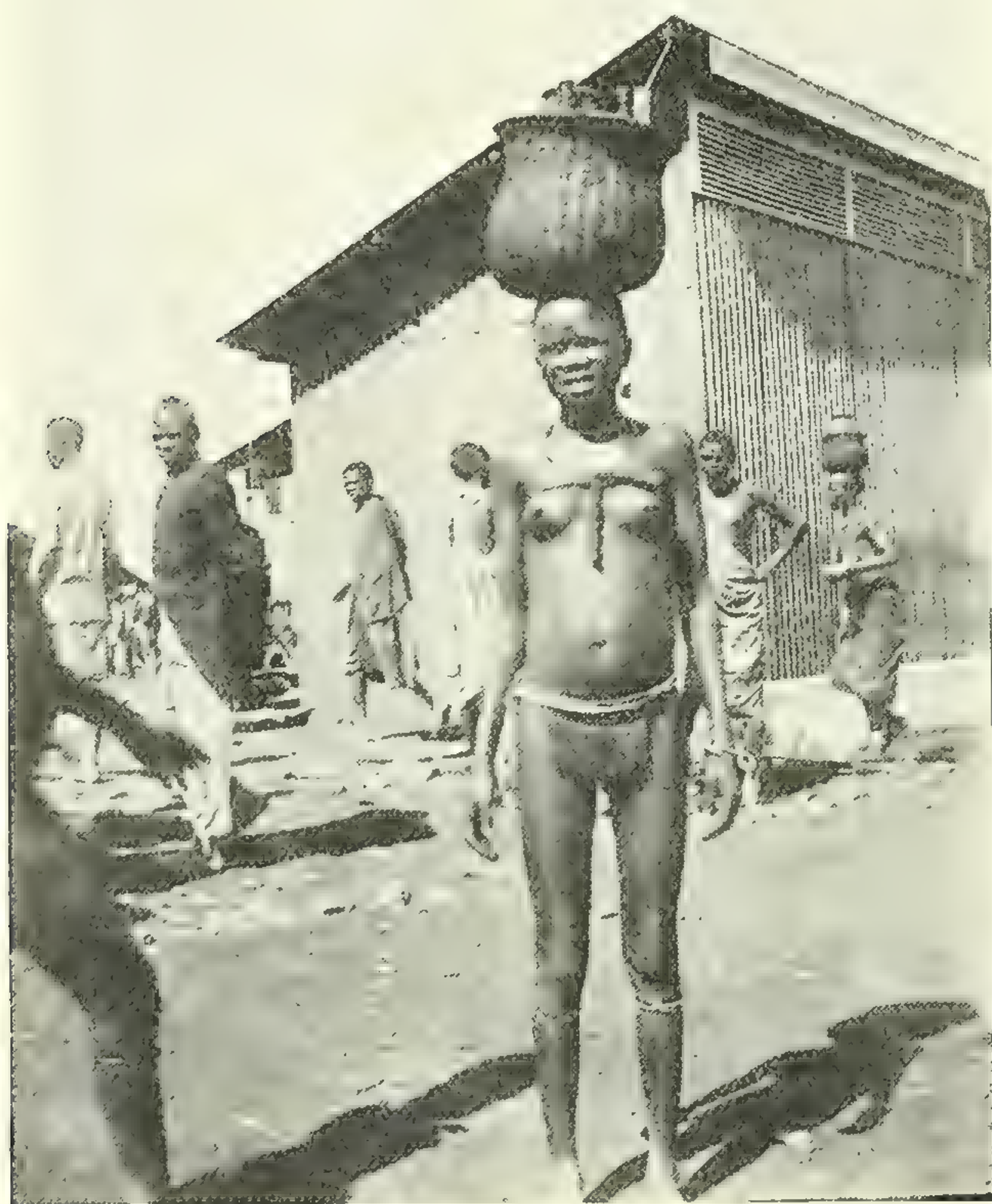


FIG. 367A.—East African woman with breast-band.

in the hinterland of Finsch Harbour (see Neuhauss's monograph on New Guinea) :

“A number of ants of two special kinds are collected ; their heads are pulled off and they are rubbed on the breasts. The sharp liquid stings the skin, causing slight swelling which is increased by dabbing with nettles. The method is naturally not efficacious at first but must be repeated. The Papuans, however, are of the opinion that it makes the breasts grow more quickly ; and if the girl endures and perseveres, the good result will not fail to follow. But this cure must not be applied while the girl is facing the sea, for the waves that wash the shore would otherwise drown all her hopes and wash away her slowly expanding breasts. There is another necessary precaution to be observed : her cousins of the opposite sex are a constant danger. The girl must never walk in front of them, or they would certainly ‘tread down’ her breasts as they tread the ground. If they are about and no evasion possible, the girl must always walk behind them.”



Several African tribes have the custom of constricting the breast by means of a band fixed just across the thorax where the outward curve begins, and tied tightly so that the breasts are held down, and thus their formation and development are affected. Fritsch confirms this among the South African Bantu; the tying down of the breast is the insignia of the married woman among certain of the Bantu. [Coudenhove also speaks of breast flattening in Nyasaland.]

Fritsch<sup>4</sup> also says of the Ama-Xosa :

“In the prime of life, the breasts are not uncomely, and they are very plump and lacking grace and delicacy of form. As soon as they become wives, the signs of a rapid deterioration appear and their breasts sag and become like empty bags of skin. They consider this normal to

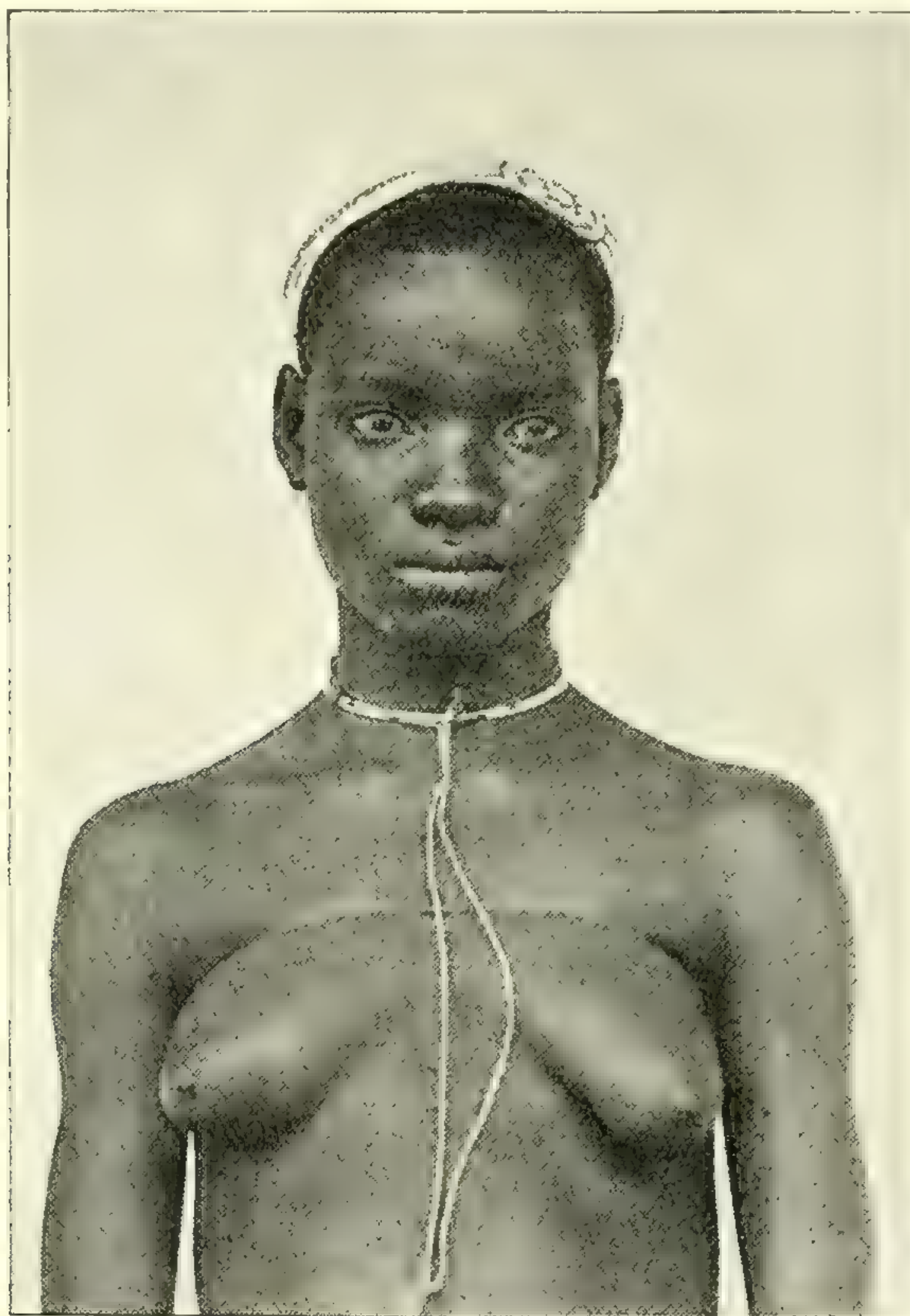


FIG. 368.—Loango negress with tight breast-band. (Photo, Falkenstein.)

woman in her prime, a beauty in itself and cultivate it by tying down their breasts. The result is that they are soon able to fling the breast over their shoulder to feed the child carried on their backs; or they suckle the child that crouches on the ground between them by lifting their arms. These facts are so often observed that the formation in question must not be regarded as a monstrosity but as normal among these people and is taken for granted in South Africa.”

Bowdich praises the statuesque beauty of form in Ashanti girls of 13 and 14, but adds that

“The young women sedulously destroy this beauty for what is considered a greater, wearing a broad band tight across their breasts, until ceasing to be globular they project conically.”

Falkenstein noticed the same custom on the Loango coast, a string or long strip of cloth (Fig. 368) being used, but he does not think that the breasts sag and



withers early as a result of this custom since it does not interfere with their physiological development ; and he believes the women are simply following an ancient



FIG. 369.—Bugakwe (river people). The third from the left shows tight chest-band ; the fifth exhibits a prominent areola. (Photo, F. Seiner.)

custom whose origin was perhaps some idea of primitive hygiene, but is no longer known to those who follow it. Pechuel-Loesche is of opinion that the Loango negresses try to raise the breasts again by means of the band or string which draws the skin tight.



Roscoe<sup>2</sup> reports the custom in Uganda, where pendulous breasts are considered beautiful, of tying them down in order to produce early results. The same custom prevails in the Congo, and Pogge reports it among the Angola, as well as all the other West African tribes visited by him. In those regions a band is tied round the breasts of the immature girls in order—so Pogge thinks—to accustom them to the need of



FIG. 370.—Women and children from Pagai. (Photo, F. Schulze.)

tying down their pendulous breasts in adult years as, otherwise, their incessant manual work would be hindered.

No doubt these customs have some effect on the development of the breasts. A definite furrow is made and there is considerable atrophy of the constricted tissues (see Fig. 368). The Galla women of East Africa press down their breasts by pulling the upper edges of their clothing very tight, and Weiss says the same is true of the Wapororo (Bahutu) women (Tanganyika): "so that in a short time and even in young women, their fine, full, erect breasts become flaccid and pendulous" (Fig. 367A). The same result is shown in a photograph of some Garikwe (Bugakwe) Bushwomen taken by Seiner (Fig. 369). Moreover, Overbergh and Gaud both speak of the custom of lengthening breasts in the Congo.



In the South Seas there is a similar custom among the native women of the island of Uvea, one of the Loyalty group. A woman depicted by Bernard wore a narrow strip of material tied round her thorax so tightly on the upper edge of the breasts that there was a deep visible furrow.

Some considerable time before this, Hille observed and recorded that the negresses of Surinam slung a triangular piece of cloth with folded ends, tied at the back, across their chest and thus dragged down and pressed in the breasts.

This recalls certain South American aboriginal practices recorded by F. de Azara :

He found that among the Payagua on the River Paraguay, the older women tie leather belts across the breasts of the young girls as soon as they have reached full natural development, draw the belts tight and fasten them at the back. Thus, before the girls reach the age of 24, their breasts sag to their waists. Rengger corroborates this information. He is of opinion that the Payaguan breast is congenitally no more elongated than the European but that the deformity is artificial and acquired.

According to some authorities, the Annamese women in French Cochin China press down their breasts by means of a double bandage round neck and shoulders over a triangular "binder." M. Bartels found a constriction of the thorax just where the breasts begin to rise, corresponding to the African custom described above in a photograph from Pagai Island, one of the Mentawai group, west of Sumatra (Fig. 370). The material used here seems to be vegetable fibre, perhaps from rotang. But the custom is apparently not general, for some women of the same village have not tied their breasts.

Riedel<sup>1</sup> states that the women of the Luang and Sermata groups in the Eastern Malay Archipelago wear a sort of bodice called kutang. This garment constricts the bosom and causes a certain amount of malformation.

Hindu women also sometimes wear a short, close-fitting bodice with pockets for the breasts so that they are not constricted.

In Europe, during the sixteenth and seventeenth centuries the Spanish women often practised a strangely archaic custom of which we are, however, unable to trace the origin or discover possible occasional survival in remote country districts. The breasts of young girls in the early stages of puberty were covered with leaden plates (*cf.* Finck), and the result was, in many Spanish ladies, positive concavity instead of prominence. Extreme thinness was considered beautiful at that time, and Countess d'Aulnoy describes the display of long chest and back, which was carried out to the greatest extent possible by the Spanish ladies of the seventeenth century. Indeed, she declares that their breasts are as flat and even as a sheet of paper.

As is well known, the latter half of the eighteenth century brought the exposure of the breasts into fashion throughout Europe. This meant the use of artificial supports in many cases.

The undue and unhealthy constriction of the breast is found not only in townspeople but among the peasants of certain districts in Central Europe. Buck made a report of the conditions in Upper Swabia where the tight clothing and bodices caused complete functional atrophy of the breasts, so that only the remnants of the nipples were left, and the women could not suckle their babies—so there was great infant mortality.

The same is the case in Dachau in Bavaria. They compress their breasts by means of a board-like apparatus from earliest youth, with the result, according to



Custer, that they cannot suckle their children, of whom from 40 to 50 per cent. die as babies. The same is the case with the countrywomen of Württemberg, whose costume is made to compress the breasts. Oppermann, Scherr and Ecker<sup>3</sup> give the following account of the women of Bregenzer Wald :

“They have muscular, well-knit frames, straight shapely legs, wide hips, but no bosom. This strange deficiency is not unknown in mountain districts, but is all the more striking as the women are otherwise of quite exuberant build. This may be because of the wooden platters strapped on to the girls, even on those more favoured by nature than the others, thus preventing the development of woman’s chief charm.” Byr records of the same district : “The tight jacket constricts the body so tightly that it almost obstructs proper physical development and gives a deformed appearance to mature women.”

According to Kleinwächter, the German population of Tyrol force the young girls into tight garments, which he compares to wooden armour, for the beauty of the breasts is not prized in Tyrol. The result is atrophy and inability to suckle for longer than about three weeks. In the parts of Tyrol inhabited by Italians this deformation is not practised and health and appearance benefit accordingly.

Among the Circassians the girls between 10 and 12 years old are braced into a broad leather girdle reaching from just over the bust down to their hips. This is then sewn tightly together or fastened with silver tags in maidens of wealthy and noble families (*cf.* Dingwall<sup>2</sup>). The Ossete girls also wear a similar garment ; this is first donned between seven and eight years of age (but, according to Pokrowsky, not till three years later)—and not removed till the girl’s wedding night, when the bridegroom cuts open the leather tags with his sword or dagger and removes the corselet. After this operation the breasts develop very rapidly. It is said that the Ossetes took this custom from their Northern neighbours, the Kabardians (*v.* Seydlitz). The writer, Schora-Bekmursin-Nogmov, himself a Kabardian, says of the Circassians :

“They fastened their girls into saffian leather garments for seven years to give their figures greater symmetry. As soon as the girl was married, her bridegroom cut open the stitches in the leather with his knife without grazing either the leather or her skin, for it is counted dire disgrace to do either. Then the young wife began to grow and thrive so well that her breast became visibly larger in a few days. All these customs continue till the present time [1866]. The custom was harmful to health and many women died of consumption or anæmia.”

Fig. 371 shows how tight and high the rampart of these corsets was. The young Kabardian (Fig. 372) is obviously encased in a similar instrument, and it is therefore impossible to detect the slightest forward and outward curve on her thorax. Oberländer<sup>4</sup> quotes from Hamar-Dabanov a song referring to this custom ; the Circassian girl laments and entreats the releasing knife of her lover :

“Nine years are past since this girl was sewn up ; since her breasts were compressed. Sorrow is in her heart because her breasts are not free ! It is time for the knife of the youth to free her from her bondage ; but where is that youth, where is he ?”

The handsome Abadzeh tribe in the Kuban district of the Caucasus flatten their girls’ breasts by means of wooden slabs (Djatchkow-Terassow).

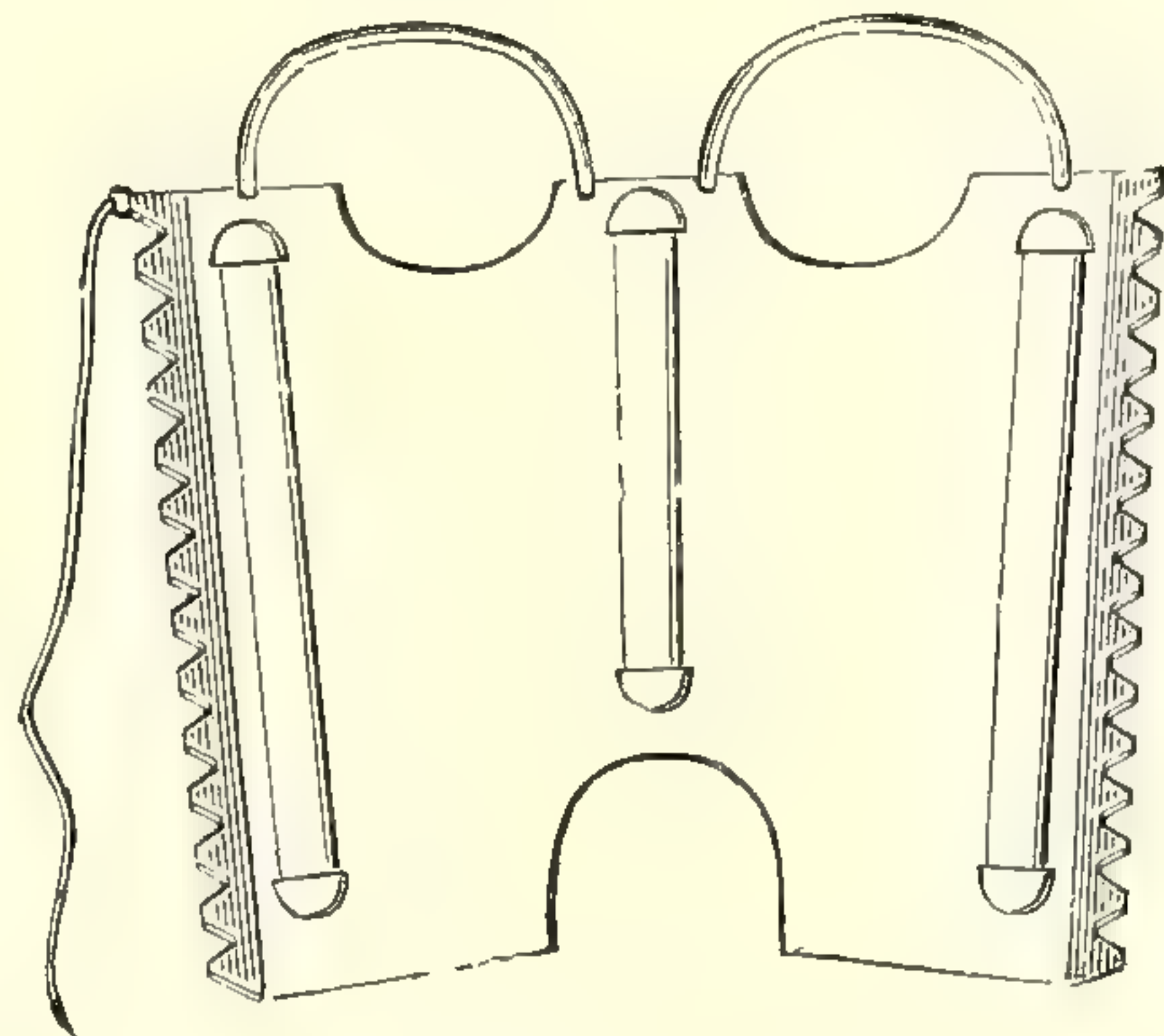


FIG. 371. — Constricting corselet used among the Ossetes. (After Pokrowsky.)



The Kalmuck women also wear constricting corsets, and disfigurement of the breasts is mentioned also among the women of Queen Charlotte Islands by F.



FIG. 372.—Young Kabardian with constricting bodice. (Naturhistor. Mus., Vienna.)

Poole, whilst Currier says that the Cherokee women occasionally compress their breasts by means of flat round stones in order to hinder their natural growth. These senseless methods form a transitional stage towards actual mutilations.



[Modern brassières and corselets, which are made with strong elastic insets and with boned under-belts are used for compressing the breasts and buttocks and providing, in the words of the trade, "a perfect foundation which moulds the figure to smart slenderness." The subject of these supports in various parts of the



FIG. 373.—Tattooing of the breasts in Tenimber. (After Riedel, I.)

world is discussed, with illustrative material, in the *Bilder-Lexikon der Erotik*, I., 200 ff. Cf. also *Die Erotik in der Photographie*, pp. 229 ff.

In 1921 a company was operating in New York City called the Boyishform Brassière Co., which dealt in breast-constricting devices which "gives you that boy-like flat appearace" according to the advertisement.]

Local tattooing is much less injurious than hard compression and constriction, and is performed for decorative purposes in various parts of the world. Among various tribes of Equatorial Africa, tiny longitudinal incisions into the skin of the breasts are not uncommon; these incisions are arranged in either vertical or diagonal rows. Joest<sup>3</sup> says that the Basuto girls

also disfigure their breasts, which are often very beautiful, by numbers of horizontal or vertical scars from incisions.

In the Moluccan Archipelago are found even more complicated tattoo designs. On the island of Ceram dots are arranged in curved lines, repeating the natural convexity of the mammary outline; while on Tenimber, a star-shaped pattern is preferred with straight or regularly curved rays, and the centre of the star is the nipple (Fig. 373). Zulu women wear special amulets which hang between the breasts (Fig. 374). These manifestations of the desire to adorn and decorate are quite harmless biologically, for the functional use of the breasts in suckling is in no way hindered or obstructed.



FIG. 374.—Zulu woman wearing breast amulet.

## 10. MUTILATIONS OF THE BREASTS

We must now turn to certain intentional injuries inflicted on the breasts by women themselves or by their near relatives. The compressions and constrictions



mentioned in the preceding section might be described as unintentional or unconscious mutilations. These specially affected the nipples, which were often made unsuitable for suckling. Unspeakable mental and physical suffering has been thus inflicted on young mothers ; and we have collected evidence that such customs exist in primitive country districts of Europe to-day as well as in towns, and as far afield as in the Moluccan Archipelago.

The intentional and fully-conscious mutilation of the breasts (as it is practised in certain religious orders by the wearing of very tight under-bodices) aims at atrophying or obliterating these organs through constant compression and at making



FIG. 375.—Skoptsi, 20 years of age, with mutilated breasts. (After E. v. Pelikan.)

the dedicated novice or nun as like as possible to the angels among whom there is neither male nor female. We need only refer to the cases of local custom in Dachau, the Bregenzer Wald and Spain to suggest that these were archaic customs which revived and have been preserved by the “heavenly-minded” atmosphere of Christianity.

There are also certain possible major operations on the breasts which remind us of the legend of the Amazons. We shall consider them in a later section, merely recalling for the moment that Strabo recorded that their right breast was seared off in childhood so that they could better throw the spear and draw the bow ; whereas Diodorus Siculus (II., 45, etc.) maintained that both breasts were destroyed. Hence their Greek name, ἀ-μαζός, “Without breast.”

According to Hippocrates, they belonged to the Sauromatian stock and lived



by the Palus Maeotis (Sea of Azoff). A brass disc was made red hot and pressed on the right breast and the muscles and flesh so seared that it could not naturally develop, so that all their force flowed into their right arms and shoulders.

In paragraph 194, Code of King Hammurabi, *i.e.*, in Babylon, 2250 B.C., the breast was to be cut off if a wet nurse tried to replace a child committed to her care by a changeling.

Cameron noticed a peculiar circumstance among the natives of Akalunga on the shores of Lake Tanganyika, as well as in Kasangalowa. The women of those regions did not appear to display their nipples, but they appeared to have a hollow instead of a normal nipple. Cameron suspected some form of punitive mutilation here.

According to Roth, the Australian aborigines on Herbert River practised this mutilation on certain girls of their tribe so that they should not rear children.



FIG. 376.—Scene from a fourteenth-century MS. of the chronicle of Rudolf von Ems. (MS. c. germ. 5, Bayr. Landesbib., München.)

As late as the nineteenth century mutilations and self-torments were practised by the Skoptsi, an obscure Christian sect of fanatics who were chiefly Russian in origin. We have had occasion to refer to these people already as regards genital mutilations. The detailed accounts by E. v. Pelikan and W. Koch mention cases known to the authors in which little girls of ten, nine or even seven years of age had had their nipples cut off, and yet these children persisted in the courts of law that they had thus mutilated themselves. E. v. Pelikan distinguished three degrees of mammary mutilation among the women of the Skoptsi, namely :

(1) The excision, the application of corrosives, or burning the nipples either on one side only or on both, the last being the most frequent.

(2) The excision of part of the breasts or the total amputation of both, which was much the more frequent form. There were long diagonal scars, resembling those following surgical operations involving amputation.

(3) Various incisions in both breasts, generally arranged symmetrically.



Koch reports that these people never performed genuine female castration, *i.e.*, oöphorectomy, but attempted to limit and frustrate sexual emotions and possibilities of intercourse by means of wholesale mutilations and ablations. On the whole, however, these mutilations appeared to be much less general among the women Skoptsi than among the men.

Their form of divine service seems to have included a ritual supper at which a small portion of a girl's mutilated bleeding breast was devoured instead of the Host, but the judicial enquiries and evidence is not very precise or satisfactory on this point (Fig. 375).

These Skoptsi trials recall the ancient legends of the early Christian martyrs with their wealth of torments and extravagant cruelties attributed to the persecuting zeal of pagans and the piety of the Christians. Whether mainly based on barbarous fact or on sadistic imagination, these legends are psychologically significant for students of human nature.

[The attraction that the breasts have always exercised and their intimate association with the female sexual organs have undoubtedly been

responsible for the hatred and dislike of those who were dominated by the morbid phantasies associated with Christianity.

As we have already seen, the beauty of the breasts has been sung for many centuries



FIG. 377.—Martyrdom of Saint Faith. (J. de Voragine, *Legenda*, 1488.)



FIG. 378.—Martyrdom of Saint Agatha. (J. de Voragine, *Legenda*, 1488.)



FIG. 379.—Martyrdom of Saint Christina. (J. de Voragine, *Legenda*, 1488.)

among all peoples.\* As I have pointed out in "The Girdle of Chastity" (pp. 21 ff.), they received much praise throughout the Middle Ages, and Marot's famous poem could well be

\* Cf. "L'éloge des Tétons," Mercier de Compiègne.



supplemented by the words of the anonymous author of "Les Amours de Charlot," when he writes :—

"Téton, téton charmant, qui jamais ne repose,  
Vous semblez inviter la main à vous presser,  
L'oeil à vous contempler, la bouche à vous baiser."

Thus we find special attention being paid to the mutilation and destruction of these glands, and as we have seen, there have been attempts in all parts of the Christian world to obliterate these conspicuous signs of womanly beauty in order to divert men's minds from the things of earth and direct their thoughts to those of Heaven.]

The most famous of these legends was that of the Sicilian virgin, Agatha, who lived in Catania in the first half of the third century A.D. The Consular, Quintianus, wooed her to be his wife, but she refused him as he worshipped the heathen gods and, persevering in her refusal, despite prayers and threats, she was imprisoned in a brothel—a frequent fate in these legends. But as she refused and remained steadfast, she was tortured by mutilations of her breasts. This has frequently been depicted in art, but with a considerable amount of variation in detail. Thus, in a *Legenda Sanctorum* of the fourteenth century (Fig. 378) formerly in Mannheim, now in Munich (Staatsbibliothek Cod. Cat. 101, 771), and in the *Legenda* of J. de Voragine (1488, printed at Nürnberg by Anton Koberger), she, St. Faith and and St. Christina are represented as being mutilated. The famous painting by Sebastiano del Piombo in the Palazzo Pitti represents her as having her nipples torn away with red-hot pincers, and the Ribera, in Berlin, prefers sheer amputation of both breasts by the executioner's sword; another version is by Lorenzo Lippi at the Galleria degli Uffizi in Florence: here she carries her amputated breasts on a golden charger and seems to offer them to God. Her feast is celebrated on February 5th, and wax images of her breasts are carried in her honour in Sicily to this day.



FIG. 380.—Jewish martyrs suspended by their breasts. From a Hebrew MS. of the fifteenth century. (After Kohut.)

The last circumstance is illuminating. Wessely points out that at the annual festival of the *Bona Dea* two enormous images of breasts were borne in procession as symbols of maternity and the fertile powers of life: he adds, "Her name, Agatha, recalls the '*Bona Dea*.'"

Other early Christian martyrs who are supposed to have met with the same form of torture before death are St. Faith (Fig. 377) and St. Christina (Fig. 379).

The same form of torture has doubtless been inflicted in warfare. Thus the town of Wimpfen, formerly the Roman *Colonia Cornelia* on the River Neckar (cf. Heid), gets its name from an ancient tradition that the women of *Cornelia* were



thus mutilated by the invading hordes of Attila's Huns (Wimpfen is said to be a corruption of Weibs-Pein). There are also traditions to the effect that an analogous torture was used in the persecution of the Jews in mediæval times and later. In a fifteenth-century Hebrew manuscript (copy by Kohut), women are represented as suspended from low branches of trees by cords or ropes looped round their breasts. But further details are lacking as to whether this agony was meant to be final or temporary (Fig. 380).

## 11. THE FEMALE BREAST IN FOLKLORE

European superstition among the common people takes much account of the breasts, generally with reference to the function of nutrition, and thus as a branch of popular or traditional medicine. We shall deal with this subject later. It may be mentioned here that in Upper Austria and Salzburg it is believed that the smaller the jug in which the water is fetched to the midwife to wash the new-born

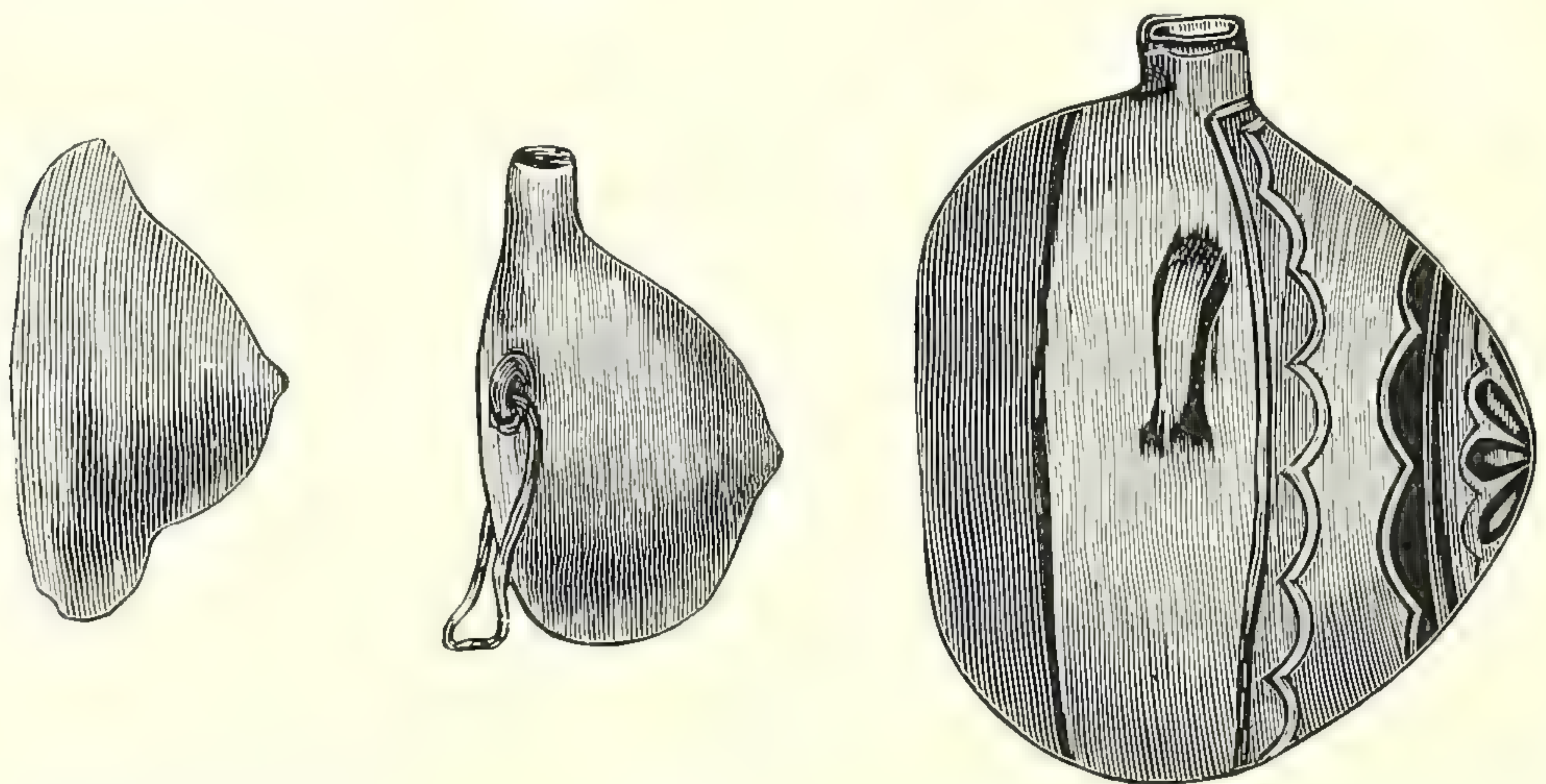


FIG. 381A.—Vessels for carrying water in the form of the female breast, Zuni, Arizona. (After Cushing.)

girl, the smaller will be her breasts when grown to womanhood (Pachinger). We may cite the riddle heard by Dufays in Mulera-Ruanda : “What are sharp as spears, yet slay not ?—The breasts of a maiden.”

In classical antiquity it was firmly believed that genuine and fully functional hermaphrodites could and did exist : creatures with male genitals and, at the same time, the female breasts and rounded form. They were often depicted in paintings, frescoes and statues. Baumeister attributes the origin of this belief to Asiatic nature myths : “of a bisexual bearded Venus, as the perfect nature deity.”

Imagination went further along these lines, and Pliny, following Calliphanes, wrote of a race of hermaphrodites : “living beyond the Nasamones and their neighbours, the Machlyes,” these were the “Androgynes of both sexes who copulate now as men, now as women. It was said that their right breasts were flat and male, their left round and female.”

The African Kabyles of Djurjura have a singular superstition, recorded by Viré. A wanderer across a place of tombs hears a sweet song at night which lures him to follow the sound. Suddenly he perceives a little woman, or rather young girl, quite black all over but very pretty ; she flees before him, slowly at first, then



quicker, and he is compelled to pursue. Her pace gets quicker and quicker, and suddenly her breasts grow longer and longer and she throws them backwards over her shoulders, leaps into a ditch and her pursuer falls after her and breaks his neck.

The same idea of spectral breasts of unnatural form and length was current in ancient Peru. J. J. v. Tschudi records the local Indians' belief in spectres called Hapiñuñu (Hapi = seize and ñuñu = breasts). These creatures have women's form but with long hanging breasts; they fly by night and seize grown men, carrying them off between their breasts.

Ehrenreich records a somewhat similar legend among the Brazilian Caraya :

"The cannibal wood demon, Mapinkuare, is often accompanied by his consort Patiniru, the one-breasted, who squirts poisoned milk at the wanderer lost in the forests."

The constricting garments (Fig. 371) worn by the Ossetes (see Section 9) are to prevent growth of the breasts, as they have a belief that very generous development is a sign of illicit love affairs.

The Zuni Indians of the Pueblo group in Arizona have peculiar pottery which closely imitates the contours of the breast and nipple (Fig. 381A). These are water pitchers carried on the back and supported by a band fitting over the forehead to leave arms, hands and legs quite free for the climb up steep cliffs from the water's edge. These pitchers are known as "mé he ton ne"; the root word is "mé ha na"—woman's breast. The water is as necessary to life as the mother's milk to her babe. Probably, in former times, these pitchers had their aperture where the nipple protrudes, but this was changed and the spout is now like a neck on the summit of the circumference (see illustration).

Even now, while a Zuni woman is using one of these, the mammillary lip is left open and only closed with a clay stopper when the work is quite done. This she does with averted eyes. Cushing, to whom we owe this interesting information, asked the reason, and was told that it was dangerous to look at the pitcher while closing the aperture; a woman who did so might become barren or, if she had children, they would die young, and those who drank from the desecrated vessels would fall sick and pine away.

Cushing makes a significant comment on the mental processes involved: the aperture of the vessel represents the "fount of life," and she who closes it must not let herself be aware of what she is doing, but turn her eyes away.

Rosen has recently drawn attention to the breast-shaped money boxes used for children in Italy, and also found in Greece,\* Silesia, Mecklenburg and East Prussia. Thilenius<sup>2</sup> has traced them in Saxony (Dresden), Thuringia (Gotha), Alsace (Strasbourg), Moravia (Brünn) and Slovakia. In Florence these little boxes are given to women who are confined, and whoever visits the mother and admires

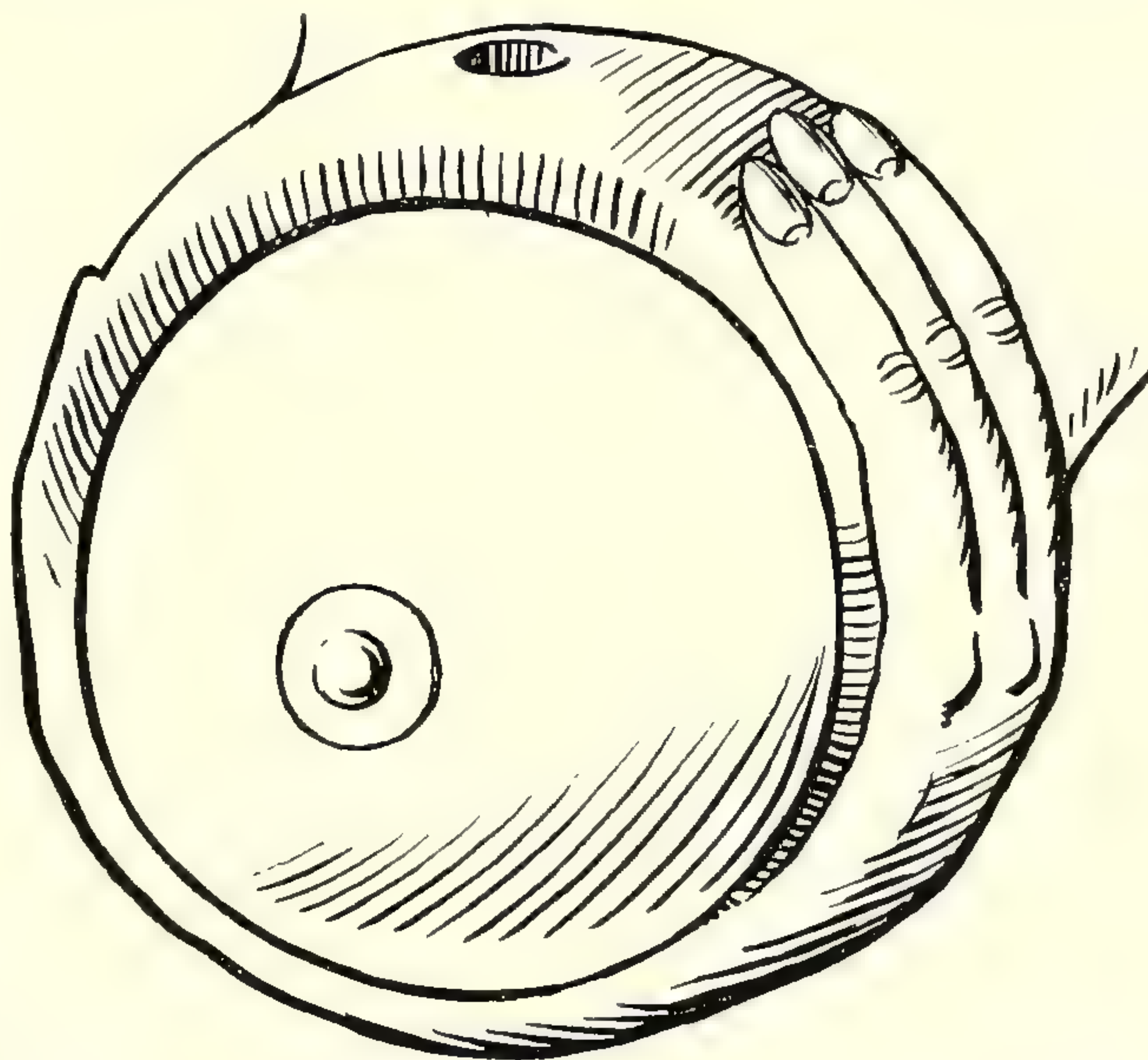


FIG. 381B.—Breast bead, Cornelian, Ægina, 1100 B.C.

\* [For milk in Greek and Roman worship see Wyss.]



the child puts a little gift into the box for the benefit of the baby. In the ruins of Pompeii and in the Middle Ages, very similar boxes are found to have been in use. Rosen thinks they were related to the cult of St. Agatha, the patroness of suckling mothers, and before that to the Great Mother herself. But Thilenius ascribes the resemblance to chance. The evidence is not as yet conclusive in either sense.

[Beads are also found shaped like the female breast. Beck has recorded their existence in Ægina as early as 1100 B.C. They are often made of cornelian, and Fig. 381B shows one of them. A hand clasps the breast, which is almost globular in shape, the hole for stringing being just above the fingers.]

George Ebers records the survival of the ideas of pre-Christian times and cultures among the Christian Copts of mediæval Egypt: "The images of their Divinity—and also of their female saints—were never designed to gratify the eyes; although their heathen predecessors had sought to represent the goddesses they worshipped as gracious 'ladies bountiful,' with regular lineaments, sometimes with a smile on their lips and always with the finely rounded bosoms characteristic of the maidens of Egypt, then as now. This charm has always been praised by the poets and singers of that people even oftener and more fervently than the symmetry of the features; beautiful breasts and abundant hair symbolise the supreme loveliness of woman in their eyes. Thus they celebrated not only the face but the breast of Hathor, the divine goddess; when her image was borne in procession from Dendera to Edfu, two acts of the festive ritual were the unveiling (*'ap*) of her bosom and its display to her worshippers."

"Hathor is always the fair, the good and the kind, and when we behold the celebrations in honour of St. Agatha at Catanea in Sicily and the waxen votive breasts offered her, we are reminded of the divine bosom of Hathor, the great goddess of Egypt and of the well-known theory that the Christian martyr is the successor and reincarnation of that nature goddess, whom pagan Egypt revered as the mother from whose breasts all creation received life and nourishment."

Max Bartels has made a further addition to the discussion of these associations by reminding us that they have also been attached to the Mother of Jesus. Among the relics treasured in certain churches, even in North Germany, are specimens of the milk from her breast. The great Cistercian Abbot, Bernard of Clairvaux (died 1153), received the singular favour of nourishment with the milk of Our Lady. (He was henceforth termed mellifluous, honey-tongued, for his eloquence was irresistible.) Two ancient pictures, both anonymous and dating from the fifteenth century, represent this miracle. They are in the Wallraf-Richartz Museum in Cologne. Both represent the Abbot in devout homage: in the first picture he kneels with his pastoral staff in his hand. An angel floats behind the Madonna, holding a crown over her brow; she carries her son on her arm. The second picture shows the Madonna and the Saint in a landscape setting, both behind a wall which shows only the upper part of their bodies. Haloes surround both heads and the infant Jesus sits naked and enthroned on a cushion set on the coping of the wall. In both pictures the Madonna has bared her left breast but both artists have avoided any direct contact of the giver and the receiver; the Saint bends his head and the Madonna presses her left breast with her right hand, holding the nipple between index and middle finger: thus she presses the milk from her breast in a fine stream towards the adoring Saint.



## PART II

# THE LIFE OF WOMAN

### A. SOCIAL STATUS AND POSITION

#### CHAPTER I

### RELIGIOUS AND SOCIAL BASES FOR THE RELATIONSHIP BETWEEN THE SEXES

#### 1. BASIC PRINCIPLES ACCORDING TO PRIMITIVE BELIEFS

HARDLY any student or investigator with claims to serious consideration can doubt that we have developed and evolved into what we now are, not only somatically but sociologically and culturally. Moreover, this evolution of the more complex forms of life out of the simpler has not been a direct, even oblique, ascent, but a wave-like succession of achievements and relapses, a spiral with occasional sharp forward spurts. In order to grasp fully the course of human evolution we need to know much more : first of all of recorded history, as well as pre-history, in which the most significant factors were frequently ignored, either because their significance was overlooked, or because it was deliberately suppressed for reasons of traditional morality or political utility. Thus the fundamental causes of the most important habits of thought and life have been obscured, almost obliterated. We need the collaboration and testimony of qualified observers of such primitive peoples as still survive. By investigation, collation of data and comparison step by step, fact by fact, inference by inference, we may obtain indications of the general human origin of any particular custom. This is not our only pathway to knowledge, for primitive peoples to-day offer us only limited material, which cannot illuminate the real sources of our present humanity. A further source of valuable material, if taken in continuous conjunction and comparison with modern ethnology, is the study of myths and legends.

Unfortunately, this most valuable branch of folk-psychology has been largely monopolised by the philologists and led into the blind alleys of what may be termed purely literary phantasy ; a phantasy which attributed a poetry of nature to a primitive stage of the human mind. There are also nature myths, but the overwhelming bulk of our legendary lore is the sediment of ancient institutions, codes and customs. As a result of his "Ethno-analysis," Reitzenstein has collected material for a history of civilisation before recorded history.\*

The first attempts to unravel the mystery of birth and reproduction and the development of the child within its mother, are interlinked with primitive concepts and with the idea of *mana*, reincarnation, the etheric soul, and similar ideas.

\* v. Reitzenstein summarises the stages of human belief in the supernatural as follows : *pre-animism* or *emanism*, leading to the precautionary measure of *mummification* ; *amulets*, *life-soul* or *etheric soul* : and third component, *shadow-soul* or "double," and the dead was given food and a wife : (Suttee, human sacrifice of girls and, finally, portrait statues or statuettes of girls or women and sometimes also of a child as well). [These ideas do not find acceptance among many competent authorities.]



[Whatever may be the truth of the various accounts of the developmental history of human institutions in their relation to women it is clear that little can be achieved without due attention being paid to the biological background. In order to understand the position of woman in the earliest communities a study of the position of the female in anthropoid societies and in living peoples who are really primitive (the so-called food gatherers) is essential. The influences of the cult of the dead, of taboo and of totemism came later. Such ideas belong to communities already in touch with cultural factors. According to some authorities they do not arise independently in various parts of the world as the result of the similarity of the workings of the human mind, but are the outcome of cultured contact and subsequent diffusion.]

## 2. SOCIOLOGICAL BASES

### Men's Societies and Women's Societies

Social factors play a part in our vision of pre-history as well as magic and religious concepts. Here, too, humanity advances from primitive to highly differentiated conditions, just as primordial humanity knew naught of gods or nature myths, so some have thought it knew no family, or family life, or marriage bond.

[How far these ideas can be justified is hard to say. Controversy has raged around the question of polygamy and the institution of the family. The idea of a kind of primitive "promiscuity" has given way before the assaults on dogmatism; and in some quarters the idea of primitive "monogamy" has taken its place. The enormous complexity of the problem is becoming better appreciated, and the errors and fallacies arising from the misuse of language are being better understood. It is true that, among the higher anthropoids there is what may be termed "monogamy," or, at least, a temporary "monogamy," and the same may be said of many primitive peoples like the Vedda or the Semang (see Hobhouse, Wheeler and Ginsberg). Even here, however, it would be erroneous to suppose that this condition depends upon the kinds of factors which become uppermost in our minds when we speak of *monogamy*, or the monogamous rule. Many of the accounts that we possess of savage institutions are coloured throughout by the mental background of the authors. Terms are used for the translation of native words which give a totally wrong impression of what the native actually means when he uses them. Thus it is impossible to attempt to discuss here the condition of women in primitive societies. All that will be attempted will be to present one or two features which may be considered of interest from the point of view of the present work.

Amongst primitive communities we meet with all kinds of associations and rigid rules regarding the sexes. H. Schurtz and H. Webster have both described certain of these savage societies and have shown their relation to the various age-classes. Such secret societies, to which women only are admitted, are known in various parts of the world; and many instances are on record where women employ a special language which is not supposed to be understood by men.]

## 3. THE SPECIAL LANGUAGE OF WOMEN

There are perceptible stages and shades of difference here. We may regard as the extreme development of this special language two cases recorded by Herodotus. He is speaking of the Sauromatæ who mated with the Amazons when meeting them: "The men could not learn the speech of the women, but the women understood



the speech of the men.” The second case he records is that of the Ionians who captured and wedded the Carian women (of Asia Minor) after having slain their men.

[In India many special women’s dialects are known, and an account of these, together with specimens, have been published in the Linguistic Survey of India, under the direction of Sir G. A. Grierson.]

Kohlbrugge mentions an ancient legend among the Tenggerese of Java to the effect that their women were originally of “a foreign tribe.” The first personal pronoun is different among the Tenggerese for either sex: it is *ingsun* for women, *reang* for men.

Spix and Martius have offered a similar explanation of the women’s languages spoken by certain South American Indians, *i.e.*, they believe that women were captured wholesale from other tribes. Martius found striking linguistic differences among the Waicuru and other Brazilian tribes, and similar observations have been recorded among the Caribs, especially the island Caribs of the Lesser Antilles. A Carib invasion of these islands has been suggested, resulting in the extermination of the Arawak men and incorporation of the women in the victorious tribe. But Stoll has shown that this particular explanation is hardly tenable, for he says that the Carib women’s language has only one word with Arawak affinities. Moreover, Lasch, who has made an exhaustive study of these special languages, including the secret women’s language—and to whose treatise we may refer readers interested in the subject—considers it very probable that a special women’s language was in use on the West Indian Islands long before the Carib conquest. He finds that there are still traces of such a language among the Arawak Indians of South America to-day (for instance, in Surinam) and cites van Coll: “If a man of his people says ‘yes,’ it must be *ehe* or *tasi*. The woman’s affirmative is *tare*. And ‘to promise’ is *bahassida* for men, *babiára* for women.” The same circumstance is mentioned by Prince Roland Bonaparte.

Another probable explanation is that these special secret languages or dialects developed in the primitive status of women and are the result of primitive sexual customs and their associated beliefs.

Stoll quotes from the language of the Cachiqual (Maya) in Central American Guatemala:

Men’s Term.	English.	Women’s Term.
Hi	Son-in-law	Ali
Ali	Daughter-in-law	Ali
Hi-nam	Father-in-law	Ali-nam
Hi-te	Mother-in-law	Ali-te

There are further examples of different vocabularies. For example, Paul Ehrenreich says of the Caraya Indians, on the Araguaya River in Brazil:

“Their most remarkable characteristic is the existence of special languages or dialects for either sex as among the Waicurus and Chiquitano. Only a few words, however, are wholly different: as a rule there are different modifications of the same roots. Thus, where in the men’s dialect, there are two adjacent vowel sounds, there is a *k* between them in the women’s speech. *Rain* is *biu* for men, *biku* for women; *maize mahi* for men, *maki* for women. Sometimes the women’s dialect



has a final syllable in addition, etc. Possibly it represents archaic forms of the current speech."

In a later publication Ehrenreich<sup>2</sup> says :

"The most remarkable thing in Caraya is the existence of a special speech or dialect for women ; a fact overlooked by all former observers and only ascertained (by me) too late to collect a sufficiently large vocabulary of the different terms." Only a few words, however, seem totally unlike each other in the men's speech and women's speech respectively, *e.g.* :

Men's Dialect.	English Terms.	Women's Dialect.
isandenodo	Chieftain	hauato
wa-tihui	Pot	beðä
uð	Coconut	hěëru
wa-dearo	Nose	wa dāanðä
iramāānrákré	Hunting	ditiüānanderi

It is possible that these words may really refer to different objects. As a rule, the differences are those of pronunciation only ; the women's speech seems to preserve archaic forms and broader vowel tones. Thus a father addresses his daughter as *dee*, a mother as *deo*. The most noticeable difference is the masculine elimination of the *k* sound so frequent in women's speech ; thus there is often an elision of two vowel sounds : *e.g.*, *yadokoma* = (girl in women's speech), *yaodoma* (in men's speech), etc. The prefix *ari* becomes *kari* for women : *I will eat* is *kari-rokusikre* for women, *ari-rôsikre* for men.

We may quote a few of the terms for bodily parts and organs in the two different dialects as recorded in Ehrenreich's fourteen-page vocabulary.

Men's Dialect.	English.	Women's Dialect.
wa-darotð	Tongue	torotð
wa-radä	Hair of head	iradä
wa-brä	Back	i-brä
i hukä	Woman's breasts	wa-kukañ (kâ)
wa-huă	Abdomen	i-huă
wa-tera	Genitalia	i-tera
i-tü	Vulva	wa-atü

F. Krause has corroborated Ehrenreich's account. We may limit our examples to the foregoing, but it is worthy of remark that, as shown above, for words referring to bodily parts the men use the prefix *wa*, the women the prefix *i*.

According to Lasch, there are also traces of a woman's dialect among the Kopagmiut Eskimo on the Estuary of the Mackenzie River and the Choctaw Indians ; at least, certain terms are said to be used only by women among these races.



A. F. Chamberlain has somewhere pointed out the difficulties arising in the course of Christian Mission work from these circumstances, *e.g.*, among the Kutenai Indians in South-Eastern British Columbia, the Lord's Prayer had to be translated in two different versions beginning respectively "Katitonatla-naeta" for men, "Kasonatla" for women, according to Father v. de Smet. In the Kele tongue, one of the South African dialects, the 99 sheep that had not gone astray had to be replaced by another simile, as 99 resembled a word tabu to the women. In fact, there have had to be some special women's versions of Scripture, for in the Carib tongue of the West Indies, for example, about 20 per cent. of the total vocabulary was different for the two sexes.

One of the causes leading to the formation and crystallisation of these special dialects was the rule that women should not utter the name of the King or chieftain or of their own nearest relatives. They are obliged to use some other word instead, as a "nickname" or magic formula. Kranz points out the particular difficulties to which women of the royal household of the Zulu chieftains were subjected; they had to avoid uttering the names of their husbands, fathers-in-law, grandfathers-in-law and of all their husband's brothers. They have to be constantly inventing new words, or syllables of words, or altering them, *e.g.*, changing *water* from *amanzi* to *amandabiu*, etc. Any woman infringing this custom was, according to Kranz, accused of witchcraft and executed. Thus there arose a perfectly distinct special language or dialect of the women, which the Zulus themselves termed *ukuteta kwabapzi*, that is, women's speech.

The same conditions and results are found in the East African Konde district. The women may not utter their husband's personal name or even those syllables which form parts of other words. Thus the wives of Muankenya may not pronounce the word *mkenya* = *bachelor*. If they have occasion to mention it they use the term *kekipi* = *wood* instead. Nor may they say anything resembling the noun *muañonda*, which is another family name. Thus, instead of *nombe* or *ox*, they say *nguafi*; instead of *nose* = *sheep*, they say *ekeampepe* = the *tailed one*, or *that with the tail*. The fatal syllable which they must avoid is *no*." (see Fülleborn<sup>2</sup>).

Vámbéry tells us of similar customs among the Kirghiz of Central Asia. The women may not utter the personal names of any of the men of the household; for to do so is considered highly improper. It is said that a Kirghiz had five adult sons named respectively *Köl* (lake), *Kamisch* (reed), *Kashir* (wolf), *Koy* (sheep) and *Pitschak* (knife). One of his daughters-in-law went one day to fetch water from the lake and caught sight of a wolf devouring a sheep among the reeds. She rushed home, screaming: "Down there, beside *that which glitters as it sways*, a *savage beast* is eating *that which bleats*."

In Serbia the young wife entering her husband's household among the peasantry, has to address her "in-laws" with great ceremony, using a particular form of address for each individual throughout life; such as, brother, Aga, Your Excellency, Lord, Heart of Gold; or for the women of her new home: sister, queen, lady, precious one, etc. (Miličević).

The Swahili women have a special highly developed dialect called *Nenola fûmbo*. It is taught the young girls in a regular and systematic manner. *Kufûmba* means to close or clench (the *fist* understood) and *Kufûmba fûmbo* is to speak unintelligibly. Zache maintains that this dialect contains a series of transferable terms; these are not specially invented syllables and sound combinations but words in use for other things and used by the women particularly with sexual significance in their secret dialect. Zache adds that the particular terms are either words in common use for ordinary everyday objects and actions; or they are resuscitated



from the archaic forms of the language or from other Bantu dialects. especially Ki-ziguha. Among the Waseguha especially, magic and secret rites play an enormous part in life still and the Useguha district may be regarded as the native soil and source of the Bantu superstitions in their most cruel and sanguinary versions.

Sir Spenser St. John<sup>1</sup> and Sir F. A. Swettenham give accounts of the secret language used by the Malay women, which is specially intricate and highly developed at Brunei in Borneo, where it becomes a system, *Bahêsa Balik* (twisted speech). The syllables of words in current use are either rearranged or fresh syllables are added to them as in the secret slang and dialects of our European school children. Thus, instead of *mari* = come, they say *malah rilah*. These expressions are constantly changing, shifting, becoming obsolete and replaced as constantly by new ingenuities, invented by the girls and at first confided only to their closest friends. [cf. Mary Chadwick in her study of "Adolescent Girlhood," pp. 259-262. She claims that these languages or sign dialects are a form of compensation for the enforced ignorance and inferiority of children and young persons towards their parents.]

The same manifestations, in a less pronounced form, may be found in European societies. Thus G. Granier says of the Parisian prostitutes: "Jargon or slang is indispensable to them and is also one of their usual diversions. By adding certain foreign-sounding terminations to all the words they use—such as *mir* or *scof*, they 'talk Russian.' Another variety of secret dialect is formed by taking the first syllable of any noun and putting it in the genitive case at the end of a phrase, while the definite article precedes the second or final syllable of the original word. Thus *la pagne du can* is their version of *campagne*, *la nette de ca*, instead of *canette*."

Something of the same kind can be traced in very different circles. The women of modern European races often use periphrases or special terms in referring among themselves to sexual matters, e.g., pregnancy and menstruation, just as, according to Zache, the Swaheli women refer to the vulva as "*courtyard*," "*shell*," or "*the woman*," possibly owing to fear of magic spells.

#### 4. THE CUSTOM OF COUVADE

This interesting custom can only be briefly mentioned here. Further details can be obtained from the works of W. R. Dawson, H. Kunike,<sup>1, 2</sup> etc. The father of a new-born child, among certain primitive peoples, goes through a number of ceremonies resembling the special care and treatment of the woman after childbirth in more evolved communities. These customs do not represent a unitary trend or complex, but may be differentiated into two groups: one of these groups is concerned with the reception or adoption of the child into the father's tribe or lineage and its redemption from its mother's tribe or stock. This implies the extremely ancient and archaic origin of that particular set of ideas. The other group is based on matrilineal institutions but is more elaborate: the child is an incarnation of its mother's ancestral spirits and would be subject to their wrath and vengeance if the male parent did not undertake propitiatory and protective rites. Thus we have both adoption and redemption or propitiation.

[It ought, perhaps, to be added that the above theory of the couvade does not find acceptance among a considerable number of anthropologists to-day. This idea of the custom as an assertion of paternity has found acceptance from Bachofen onwards by many writers although the facts do not seem wholly to warrant it.



The origin of the custom is certainly obscure and it is doubtful whether any " explanation " will be arrived at which is wholly satisfactory.]

### (a) Rites of Adoption

We know from many observed and recorded cases throughout the world that, during the actual operation of matriarchy the husband resides in his wife's home and among her kinsfolk and tribesmen. Thus, it has been reported of the Cayapo people that, while the woman is pregnant and just after she had brought forth her child, the father was her housemate, but, after weaning, he left the woman, who retained the child and brought it up as a member of her own tribe. When the patrilineal and patriarchal supersede the matriarchal, the woman is brought into the man's home and tribe and her child becomes his. Among the Yerunkala, a Dravidian people in India, the man attires himself in his wife's garments and ties her tribal badge round his brow. Diodorus (*Bib. Hist.*, v., 14), recorded that in ancient Corsica the husband was put to bed instead of the parturient wife; and Strabo (*Geog.* III., 4, 17), tells of the same custom among the Celtic races, *i.e.*, the husband and father goes through a masquerade meant to deceive or propitiate the ancestral spirits. There are similar customs among primitive races to-day, but there are varieties of method here. Sometimes the man is treated with the utmost care and fed with dainties as though he were the parturient mother. Or else he is obliged to " fast," and is under strict taboos as to food. These deprivations are well-known traditional means of summoning gods, demons and powerful magic aid; priests, medicine men and shamans fast habitually, for hunger dreams are known to have particular vividness and clarity and a certain hypnotic quality: they liberate the perplexed mind and form a bridge into the unseen realm. Thus, the father in couvade gets into communication with the ancestral spirits of his tribe and stock. The food tabus have a certain affinity with *penances* and self-mortifications, such as are more akin to the second trend of ideas expressed in propitiatory ceremonies.

### (b) Rites of Propitiation, Strengthening and Redemption

The father, here, is the guardian who has to ensure that the child thrives and becomes strong, for uncanny beings and evil spirits generally are regarded as the souls of the animals whom the father has killed and eaten. These are further supposed to throng around the new-born child and, therefore, the father must avoid flesh food. Other unseen foes try to abduct the child or put a changeling in its place. In certain country districts of Germany to this day the father watches over the child on the so-called " Rachnächten " (smoke nights) from noon till midnight till its first year of life is completed.

There are also obligatory blood sacrifices: the strength drained from the man's veins is believed to flow into those of the infant. Thus, as late as 1665 it was customary among the West Indian Caribs for the father of any child born into the tribe to abstain for a year after the birth from eating the flesh of the manatee (sea cow), great tortoise, pig, chickens and fish, lest the baby should resemble any or all of these creatures. In other cases we find definite time limits recorded, such as that preserved by de Laet (1633); " until the wound of the severed umbilical cord has healed." These Caribs also scraped the father's hands with the sharp edge of the aguti's tooth—a ceremony which guests invited to the father's abode performed. Then, according to Du Tertre, they washed the wound with a decoction



of from 60 to 80 large red pimento berries, and the child's face was smeared red with its father's blood in order to give it magnanimity and courage.

The custom of the Couvade has been recently examined afresh by W. R. Dawson and to his work the attention of readers is directed.

### 5. THE HEIRESS AND THE AMAZONS, IN HISTORY AND LEGEND

Many primitive peoples are intensely concerned about individual survival after death, and believe more or less explicitly in the need to supply heirs or issue who can perform the funeral rites and reincarnate the ancestral essence of the stock. By a trend of thought connected with the patriarchal organisation of the community and male dominance, it became both ignominious and disastrous not to have achieved parenthood of at least one son. How could this misfortune best be met? The choice of methods is limited to :

(1) The capture of boys stolen from other tribes and their inclusion in the tribe of the kidnappers.

(2) The adoption of sons of other members of the same tribe.

(3) Levirate Marriage and its cognate forms.

All these three do not here concern us.

(4) The nurture and education of daughters on masculine lines, so that they may play the part of sons.

It was, of course, impossible to obliterate the girl's primary physical attributes, but the mammary glands could be removed (excised) or, to some degree, constricted and arrested in growth, as we have seen is still practised among certain races of the Caucasus.

The archaic habit of mutilating or disguising the female breasts becomes associated with the recognition of the daughter as her father's successor and representative, and this is the theme of legends and sagas in many lands and always with references of a definite historical or ethnographical kind. Slavonic peoples have supplied particularly rich material in this connection and F. S. Krauss<sup>1</sup> has collected facts relative to the Balkan Slavs with graphic clarity and fullness. If a Jugo Slav household loses its male inmates by death, leaving a daughter as its sole representative, she is termed *blagarica* or *blagašica* (*Croatian*) and the man who marries her (*domazet*) is said to marry out of his natal household (*udaose*), the term usually applied to the woman in marriage, whereas the man "*zenise*"—"takes a wife." The husband of the heiress has to take her family name and the children likewise and his position is somewhat looked down on and unenviable. "*Blagarica*" is "lady of the manor," "female landowner"; and "*blagašica*" is a derivative from the term for dowry: among the Dalmatians, to marry an heiress is "*na blago se ženiti*." Moreover, something of the same kind is found in New Mecklenburg, according to A. Hahl.

### 6. THE AMAZONS IN ANTIQUITY

The classical legends and references go back to beyond recorded history. In Homer's "*Iliad*," the aged Priam, King of Troy, tells Helen of Sparta that he went at the head of a band of warriors to Phrygia as a young man to help his allies Otreus and Mygdon: "On that day when the Amazon warrior women invaded their land." There is no more suggestion of anything mythical here than in any other deed of arms, or warlike tribe mentioned in the great epic. And Herodotus



mentions them as well, though he, too, says nothing about their original home ; but they must at one time have dwelt near the Phrygians and Hellenes, as they were engaged in war with both these peoples.

Herodotus thus begins his account of the Amazons :

“When the Greeks did battle with the Amazons, it is recorded (or it is told) that the Greeks were victorious at the battle on the Thermodon and then captured as many Amazons as they could alive and sailed away with them on three ships.”

Stricker has enumerated the warlike adventures and invasions of the neighbouring lands by the Amazons.

They attacked the Phrygians and were beaten by Bellerophon (“*Iliad*,” III., 189 ; VI., 186 ; and Strabo, XII.). They fought the Greeks before Troy, where their Queen Penthesileia was slain (*Æneid*, I., 490, Justinus, II., 4) and invaded Attica where Heracles and Theseus drove them back. They also made a Danubian campaign (less known to fame than the others) which must have occurred somewhere about 600 B.C. (Philostratus, *Heroica* XX. and Pausanias, III., 19). Finally, there was a further campaign as late as the days of Alexander the Great, as mentioned by Justinus, Curtius and Diodorus Siculus. They are also mentioned in the long wars of Mithridates against Rome, perhaps merely as an echo of the heroic days of Greece.

The account in the history of Herodotus deals with the subsequent fate of the Amazons who were captured and carried off. They succeeded in killing their captors, but were unable to steer the ships and were finally driven by winds and waves on to the coast of the Mæotis Palus at Cremni, inhabited by free Scythians. Here they were more at home : they mounted the wild horses that ranged the plain and plundered Scythia :

But the Scythians could not understand it ; they knew neither folk nor tongue, nor garment, of these people ; they thought they were men and fought them and only learnt they were women when they beheld those fallen in battle. Then they sent out a number of their young men to seek out the Amazons, make friends and, if possible, mate with them and beget children so that the two peoples should be one.

The Scythian youths encamped near the Amazons, did not attack them and succeeded, finally in their enterprise ; but the Amazonian women would not accept the Scythian plan of returning to the men’s homes as their customs were different and trouble must ensue with the Scythian women. So they suggested to their new husbands and companions that they should gather gear together and seek a new country, and the young men agreed to this. They crossed the Tanais (River Don), and they made their way for three days’ journey eastward of the river and then northward for another three days from the Mæotis Palus. In that district, continues Herodotus, they made their homes. And for this reason, the Sarmatian women have still the customs of old. They go hunting on horseback both with their menfolk and alone. They go to war also and wear men’s garments. As to marriage, their customs are that no maiden may marry until she has slain a foeman in battle and thus many die unwed having failed to fulfil this law.

Herodotus here is referring to an Amazonian group which separated from the mother tribe and—apart from their inclination for warfare and the chase—broke their traditional customs by permanent wedlock and cohabitation with Scythian men. We are told nothing of what happened to their offspring.

Strabo regarded the foothills of the Caucasus as the homeland of the Amazons, and gives the well-known particulars about the mutilation of the right breast—by cauterisation—in early youth, so that they were the better able to use their right arms, especially to throw the spear. They had also bows and arrows, shields and small battle axes. They made themselves tunics, girdles and head-dresses of the skins of beasts. In the springtime they went among the Gargareans, from



whose land their own was separated by a mountain, "in order to obtain progeny." They sent the boys back to their fathers and kept the girls, who were incorporated in their tribe (*cf.* Hüsing).

Even in antiquity certain authors expressed doubt in, or disbelief of, the full Amazonian legend, especially Strabo, who, while recording what was believed about them, was very sceptical. But he mentioned that such famous and prosperous towns and cities as Ephesus, Smyrna, Cumæ, Myrina and Paphos were believed to have been founded by them.

Palæphatus was even more incredulous, and mentions that it was said, among his contemporaries, that the Amazons were really male barbarians of a savage tribe "wearing tunics down to their feet like the women of Thrace, binding their hair and shaving their beards, and, therefore, called women by their enemies."

Nevertheless, in spite of these doubts, the memory of the Amazons, whether mythical or not, long survived on the slopes of the Caucasus. Guyon quotes the account by P. Archangelus Lamberti of his visit to Prince Dadian of Mingrelia :

During which a letter was brought to the Prince relating that there had been a descent of numerous unknown tribes from the mountains ; that these invaders had separated into three hordes of which the largest had attacked Moscow and the other two had fallen on the Svanetians and other Caucasian peoples but been repulsed ; and that there were many women among the dead on the battlefield. They even brought the Prince some of the weapons and armour of these women to prove their tale ; the weapons and harness were splendid to behold and very decorative. There were helmets, cuirasses and armlets formed of countless small overlapping scales or disks of iron ; these were elastic and supple, giving easily to every movement of the body. To the cuirass was attached a sort of woollen skirt or kilt reaching midway down the leg, of the most brilliant red like scarlet dye. The footgear was covered with small disks of brass and fastened with fine, strong and very skilfully twisted strands of goats' hair. The arrows were over four spans in length, gilded all over and of the most highly tempered steel at their tips, which were not pointed, however, but furnished with edges three to four lines wide and sharp as chisels. These Amazons have often been engaged in warfare with the Kalmuck Tartars. Prince Dadian promised immense rewards to the Svanetians and others if they were able to bring him a living captive Amazon woman.

Chardin was shown a curious trophy in the Cacheti principality :

"In the Prince's palace, a great garment for a woman, made of thick wool and of very strange fashion, which was said to have been worn by an Amazon who had lost her life at Cacheti in the most recent wars."

In view of the scepticism expressed by both modern authorities and ancient historians, there is a particular significance in certain archæological discoveries in the Caucasus some decades ago. Bayern was excavating sites near Terek when he came on a grave on the property of a Chevsur at New Djuta. This grave contained the "skeleton of a woman with armour, arrowheads, a discus of slate and an iron knife." And this discovery was followed by another in the same district at Aul Stepan-Zminda (called Kasbek by the Russians), which was known as "The Treasure of Aul Stepan Zminda."

"All that I have found here," he writes, "belonged to women and warriors, although I found none of the recognised weapons of tradition—for the iron lance heads belonged unmistakably to a quite modern era and were in another stratum. The horsewhips had heavy handles which might conveniently serve as clubs ; the great bracelets of bronze, an inch wide and convex on the outer rims—such as are worn by the Chevsur people to this day—can easily be used to stun an enemy or ward off a blow—and I have many similar specimens in my



collection. The horses' bits, the ornamental harness and the stirrup irons suggest equestrian nomads and even the stirrups were adorned with bells suggesting female riders. I could not find anything that was likely to have been used by a man."

We may append a final quotation :

"An even more famous shrine is that of the holy Gargar, of which the Georgians—not the Ossetes, as is usually believed—have much to say. The shrine stands on the summit of the mountain which towers above the village of Gergeti, opposite Stepan Zminda, and forms part of the eastern bastion of Kasbek. Aul is called Gergeti after the saint, but the original name, as given by Strabo, was certainly Gargar, and Strabo recounts the annual pilgrim visits of the Amazon women to the Gargareans. In later ages a Christian monastery was founded there and the



FIG. 382.—An Amazon. From a vase in the British Museum. (After Furtwängler.)

monks were called after the ancient pagan Gargareans. To-day there are only married Georgians with homes and families in Gergeti, but the ancient spring pilgrimages still occur with all their pagan orgies, as I can state on the testimony of my own eyesight, not only at Stepan Zminda and Gergeti, but in other regions of the south-eastern Caucasus in the Peshawi district. I do not know who the holy St. Gargar was. According to Strabo, only the Karbardian Amazons visited the Gargareans, and this would be consonant with my discoveries at Stepan Zminda."

Herodotus further mentions that the Scythians called the Amazons "*Oiorpata*"—Slayers of Men (*ἄνδροκτόνοι*).

Carus Sterne believes that the Amazonian legends of antiquity referred to gynæcocracies or matriarchal communities such as are now known still to exist. He connects this social structure with the cult of the Moon-goddess or Earth-Mother and the struggle between the Achæians or the Nordic Siegfried and the warrior women is the fight between this ancient worship and that of the Sun-god.



Heracles, Theseus, Perseus, Achilles, Jason, Siegfried, etc., according to this theory, are simply solar myths, and Semiramis, Dido, Medea are no mortal women but personifications of the changing moon and the earth. "Medea is Hekate; Dido, Astarte; Penthesilea, Artemis; the Amazons are races which had not yet adopted patriarchal institutions." He adds that the women of these races soon welcomed the innovation, for Medea helped Jason and Ariadne Theseus against the dark devouring earth and the daughters of the moon ladies married the sons of the sun.

It is impossible to judge how far this theory is correct or generally adequate. In Sterne's day all ancient sagas and myths were supposed to be astronomical or meteorological or vegetational in meaning, without reference to cultural and sociological evolution. Sayce identified the Amazons with the Hittites of Karchemish:

They worshipped the great goddess known to Babylon as Ishtar and to Sidon as Ashtoreth: this worship was brought by the Hittites to the western shore of Asia Minor and the islands of the Ægean Sea. He mentions one point of considerable cogency for his case. All those towns of Asia Minor which the Greeks believed to have been founded by the Amazons, were of Hittite origin.

Diodorus (III., 53) mentions African as well as Asiatic Amazons, according to the version of Dionysios of Mytilene:

"In the western parts of Libya, on the edges of the world, *a people is said to have lived* under the rule of women. The women waged war, vowing themselves to this for special times, and during their vow they kept apart from man. When they had fulfilled their vows and the time past, they mated with men and bore children but kept public offices and the rule of the state for themselves. The men lived in the house, as the women do among us and took charge of the children. . . . When a girl baby was born, both her breasts were cauterised (burnt off) so that when they grew and rose they would not interfere with the use of weapons. Because of this, these women were called breastless—Amazons by the Greeks." [Cf. W. Leonhard, A. D. Mardtmann, W. Stricker and Rothery, p. 109.]

## 7. THE MEDIÆVAL LEGENDS AND ACCOUNTS OF THE AMAZONS

In the Middle Ages stories of the land of the Amazons are also to be found.

Jacob found highly curious material in the writings of the Arab geographers and travellers: Thus Kazvinī speaks of

"The city of the women," a mighty town set in wide lands in an island of the western Ocean. Tartûshi says that its inmates are women, free from all men's rule, who understand horsemanship and themselves take the field in warfare, showing great courage in action. They have male slaves who visit them in secret by night. If one of the women should bear a son, she slays the child at once, but, if a daughter, she rears her. The same author adds that this city is a fact beyond all doubt.

A similar account is contained in the famous records of Ibrahim ibn Ya'kub, who relates:

"Westward of Rûs lies the city of women. They have fields which are tilled and they have slaves who beget their children. If the child is a boy, the mother slays it. They are skilled in horsemanship and war, and they show great courage. The tale is true—Otto, the King of the Romans, told me of it."

On the eve of the Middle Ages the same tale appears, but here again the geography of this women's state has changed. Eneas Sylvio de' Piccolomini, traveller and author, and later Pope Pius II. (1405–1464) recounted the ancient Bohemian tradition of the women's kingdom under the queens Libussa and Valasca.



Krünitz, who translated Guyon's treatise into German, refers to another mediæval legend of an Amazonian race. The authority here was Adam of Bremen, the indefatigable chronicler who lived in the latter half of the eleventh century.

In one of the appendices to his main work, he dealt with the topography of Denmark "and other Hyperborean parts," and in Lib. IV., cap. XIX., of his record, he mentions a community wholly composed of women and dwelling on the shores of the Baltic Sea. He relates the same stories that are recorded in other Amazonian legends, but exaggerates in a fantastic manner, *e.g.*, he describes pregnancy through drinking magic brews, or through intercourse with monsters which were frequently born among them. Moreover, if they became mothers, they either brought forth beautiful girls or "Cynocephali," which he defined as "monsters whose heads were where other men's chests were."

The Chinese also gave currency to Amazonian legends. An anonymous author, signing himself "Dr. H.," gave the following particulars in the journal *Globus*, according to Schlegel's article. The ancient Chinese were acquainted with three "countries of women," one to the west, one to the south and one to the east of their country. The last named was known as Niu Kouo. The Buddhist Shaman Hoëi-chin described it as follows :

"1000 li eastward of Fusang, lies the land of women. These women are of very pleasing appearance and their skin is white, although their bodies are covered with hair so long that it trails behind them. In the second and third months of the year, they cast themselves into the water and become pregnant through it, bearing their offspring in the sixth and seventh month. They have no breasts and are very timid. If they behold a man, they flee in terror for they are in awe of their own mates. They eat sea-weeds like wild animals ; the foliage of these sea-weeds resembles that of the fragrant Hao [*Artemisia Japonica*]."

"In Nan-chi it is recorded that in the year 507 of the Christian era, a man of the province of Fu-Kien was cast away on an island. He saw native people whose speech he could not understand. These men had dog's heads on human frames and their voices were loud and harsh like the barking of dogs."

The author who writes under the initial "Dr. H." believes this fabulous island to have been one of the Southern Kuriles, the chain of rocky islands running from Yezo northwards. The Amazon women, he thinks, were the seals of the genus *Otaria*, which are found in those islands in great numbers to this day.

These animals feed on the edible seaweed (*Fucus esculentus*), which is also an article of diet among the Chinese, Japanese and Ainu. Schlegel, in his paper *Niu Kouo*, points out that the peculiar dog-like barkings of these beings, as described in the ancient Chinese account, the long hair, pale colour, aquatic habits, ferocity of the males, and timidity of the females—all apply perfectly to the seals.

The Chinese legend of the Amazons may have, therefore, a simple zoological explanation.

A Chinese chronicle of the seventeenth century is also said to state that

"These women conceive through the south wind before which they place themselves when naked. There are no males in the country and the Ainu also say that they conceive through the wind which they face when they emerge from their bath."

In the year 1522, Pigafetta gave a fresh account of an "Amazonian" people, namely, the inhabitants of the island Ocoloro in the Malay Archipelago, identified by modern geographers with Engano, which lies to the south of Sumatra. Modigliani wrote an account of his travels under the title "L'Isola delle Donne ; Viaggio ad Engano," and he quotes from the book by Pigafetta :



“ Our pilot told us many further wonders. Thus, that there were only women on that island and they became mothers when the wind blew upon them. They slew their boys but reared their girls and if a man came to their island they put him to death.”

Modigliani believes the origin of the tale to be the rush of the native women to the shore when Diego Pacheco's Portuguese vessel, approached the island (in 1520), whilst the men were arming themselves for an attack. The women expected the vessel to be driven on to the rocks, in which case they would have plundered all the belongings of the shipwrecked strangers.

## 8. THE AMAZONS IN MODERN TIMES

During and just after the great discoveries in the Southern Continent of the New World in the sixteenth century, there was a revival of Amazonian legends, and the giant river discovered in 1541 by Francesco d'Orellana was called after the warrior women and bears their name to this day. Stricker and H. Fischer give full contemporary accounts of this discovery. Orellana was told by a Cacique that a tribe of women lived on the banks of the river, apart from men, skilled in the chase and tilling the soil themselves. At certain times every year they allowed the men of neighbouring tribes to visit their hunting grounds ; their sons were handed over to the fathers, their daughters they reared themselves.

After Orellana had travelled some way into the interior of the country he heard a similar story. The name for the strange women, he was informed, was *Conia-pu-yara*—" great women," or " tall women." Some hundreds of miles further on their journey into the unknown the Spaniards were greeted with a swarm of arrows in flight and had to defend themselves against a band of Indians, including 10 to 12 women who not only took part in the battle with the utmost ferocity, but urged on their menfolk and struck down the laggards with great clubs. These women are described as tall and of powerful build, but with comely features ; their hair wound round their heads in long braids ; their clothing was very scanty, and their weapons were bows, arrows and clubs. Seven of them were killed in the fray, whereupon the Indians took flight.

Many later explorers of the Brazilian and Venezuelan forests heard and recorded stories of Amazonian women. A man of the Tupinamba tribe told C. de Acuña that, as a child, he had accompanied his father on a visit to the Amazons and seen the handing over of the little boys to their fathers' tribes. La Condamine, who wrote in the eighteenth century, also met persons who claimed to have seen or known the Amazons. At Topay he found the curious pieces of nephrite or jade which are known as *muirákitans* or " Amazon Stones." The Topay tribes declared that they had received these " from their fathers," who, in their turn, had received them from the " *Congnontainsecuma*," the " women without men," who possessed many such stones.

Rodriguez also was told that : " At the source of the Yamunda River there lies a beautiful lake called Yacuaruá, which was dedicated by the Amazons to the Moon. (Here, again, we find the association of these mysterious women with a lunar deity.) At a certain season of the year and phase of the moon, the Amazons assembled on the shores of the lake and celebrated a festival in honour of the moon and the mother of the *muirákitans*. If, after some days of ritual festival, the lake appeared smooth and clear, reflecting the light of the moon, the Amazons dived into the waters and gathered the *muirákitans* from the bottom of the lake, thus receiving



them from the Great Mother's own hand ; they were slightly soft and plastic but soon hardened completely when they were removed from the water. They presented *muirákitans* to the men who found favour in their eyes. It is a striking fact that in the course of his excavations round Lake Yacyuaruá, Rodriguez found not only potsherds, but little images or amulets of jade together with jade fragments which had not been worked into shape ; a clear proof that the amulets were constructed in that locality.

Schomburgk received detailed accounts of Amazons and sought for them but did not find them, though he went as far as the Corentyne. He says :

“ The kernel of fact on which this widely spread tradition has been built up must certainly be the fierce and active character of the women of various native races of the New World. Columbus, in the course of his second voyage, encountered a canoe near Santa Croce, and the women on this canoe fought the Spaniards with as much obstinacy and vigour as the men. And he was even prevented from landing on Guadeloupe by armed women.”

Peter Martyr stated that among these West Indian aborigines

“ both sexes have great bodily strength and are masters of the use of the bow, as well as of other weapons. If the men are absent from their homes, the women meet attacks as bravely as their husbands, so that they may indeed be considered Amazons.”

He also mentioned the Island of Women with the story of the Amazons.

The Amazons no longer haunt the shores of Lake Yacyuaruá. Indian traditions declare that they have been replaced by a tribe which alone possesses the art of making the jade amulets or *muirákitans*, and these specimens of their craftsmanship are identical in all respects with those found by Rodriguez. This tribe, the *Uaupés* of the Yamundá River, are distinguished by rather pleasant features, softer and more feminine in outline than is usual, and their women accompany them on the warpath, supply them with fresh arrows and even take part in the fray themselves. Moreover, there is a tradition among these people that they once lived on the shores of a magic lake in which lived the “ mother of waters ” who taught them how to carve the amulets ; but one day she took the form of an animal and was shot down by a member of the tribe. A great flood then arose and drove the *Uaupés* to seek fresh hunting grounds. Rodriguez concludes that there can be no doubt that the South American Amazons were really the *Uaupé* women.\*

Crevaux also believed he had found the originals of the Amazons. He says :

“ We came again to the mouth of the creek Coucitenné which we had crossed on our way from Yary to Parou. We arrived at sunset and had still to march two kilometres to reach the village which was in the heart of the forest. I was amazed that no men were there to bid us welcome. I went into three huts and found only women ; I asked the oldest of them, who appeared the least timid : ‘ Where are your men ? ’ She replied in her laconic tongue : ‘ Men, no.’ I was interested ; were these, then, the famous Amazons about whom learned men from the times of La Condamine have argued for centuries ? Were these the women found by Orellana on the banks of the Trombette and of whom a Spanish conqueror told such romantic fables that the greatest river has since been known by their name ? I daresay Orellana met tribes consisting of women only ; but what an imagination he must have possessed to compare them with the women warriors of the Homeric poems ! Incidentally, it was evident that the Amazons of the Parou were not in the habit of cutting off either of their breasts for convenience in handling the bow.”

\* It must be recorded, however, that Koch-Grünberg, in his work, “ *Zwei Jahre unter den Indianern* ” informs us that *Uaupés* is a native term of abuse.



In the account by Edward Lopez of his travels to the Kingdom of Congo in the year 1578 he describes the land of the Monomotapa : we translate his account as follows :

“ Among his chief stalwarts are the crack regiments of women, picked troops whom the ruler thinks his best fighters.

“ They burn away their left breasts in order to shoot more effectively with bows and arrows. They are expert, rapid, bold and fine archers and, above all, they stand their ground in battle and do not easily take to flight, but use the stratagem of appearing to do so and then, turning swiftly on the enemy who pursues, inflict great damage on them with flights of arrows. When the ranks of their enemies are broken, they fall on them suddenly and shoot and strike them down, for which they are greatly feared by all. They reside in districts specially set apart by their Emperor for the purpose and, at certain times and seasons, go among men and mate with them, thus conceiving children to continue their race. If they give birth to sons, these



FIG. 383.—Amazons at Monomotapa. (After Lopez.)

are sent to their fathers' land ; if to daughters, these are kept by their mothers and reared so that they too may go to battle when they are grown.”

Fig. 383, which accompanies Lopez' account, is probably a work of the seventeenth century. In the background a skirmish is proceeding between a troop of Amazons and some armed men. In the immediate foreground is the nude figure of a young Amazon with a bow and arrow and a quiver suspended from her right shoulder. Her left breast is quite obliterated. To one side and in the middle distance is a group of three women by a blazing fire. One of them, a young girl, sits across the knee of another older woman, who presses an iron instrument like a tube or seal against her left breast, whilst a third holds her firmly down. All three are naked.

As is well known, the female regiment of the ruler of Dahomey persisted till quite recent times. Duncan mentioned ten regiments, each consisting of 600 women ; they were the ex-wives of the ruler of Dahomey, who left his harem on attaining their 20th year. Sir Richard Burton<sup>2</sup> has described their uniform, appearance and habits in some detail. The women performed intricate dances and



hunted wild animals as well as engaging in warfare and forays. John Duncan has also described these formidable warriors.

According to the missionary Chalmers, there were tales of a "Land of Women" current at Port Moresby in New Guinea, and when Chalmers sailed to the adjacent island of Mailiu (Toulon), he found hundreds of women and only one man; many of the women greeted the stranger with ear-piercing screams and attempts at flight till he offered them beads, at which they crowded round him. But the older women intervened, and, as some men were seen to approach the shore in a canoe, Chalmers found it advisable to take his departure. He found an adequate explanation of the genesis of the local legend when certain men and youths of Mailiu, about to sail for the larger island (New Guinea), informed him that they were in the habit of coming over to till their plantations, leaving the women on Mailiu with a few "proved warriors" as guards. From time to time the men brought back food and returned again to work. Meanwhile, the women go out trading native produce in their canoes and reach even so far as Dedele on Clondy Bay. They had taken off some shipwrecked sailors in one of these boats, but at Dedele the sailors had been killed; a circumstance which, of course, contributed to build up the Amazon tradition of ferocity.

We may, however, doubt whether all such legends may be so easily and obviously explained. The "Land of Women" reappears again and again. Among the Papuan tales quoted by the missionary Bamler (in Neuhauss' work on New Guinea), we find the story of "The Two Ginggala men in the Land of Women." The story goes that "only women lived there" and that they cut the child out of the mother's living body and buried her. And this version has echoes in a legend current among the Polynesian Maori.

The Mentawai Islanders, according to Maass, have a story of a country from which the sun arises in the morning and which is inhabited by women exclusively. "The south-east wind is their husband; when the wind blows on them they conceive children." The Immaculate Conception or Parthenogenesis is about as primitive a concept as that of the Amazonian horde, and here we find them associated.

What is the actual foundation of these far-flung tales and race memories? Friederici<sup>3</sup> and Lasch have recently put forward two opposing theories regarding the American material, but they neither of them seem to touch the heart of the matter.

[So many attempts have been made to explain the stories of the Amazons that it is clear that the evidence is insufficient for us to come to any satisfactory conclusion. For those who wish to pursue the matter further we may add to the references given in the text the works of Uckert, Nagel, Bergmann, Klügmann, Lacour, Friederici,<sup>3</sup> Rothery, Lasch, and the articles in the various classical works of reference, such as Daremberg-Saglio, Pauly-Wissowa, etc. In the eleventh edition of this work von Reitzenstein laid considerable stress on the various legends of warrior women as opposed to the story of the land inhabited by Amazons. It seems to me that these stories may be connected inasmuch as they both tell of a vocation for women not usually recognised as suitable to the female sex.\*

\* For example, he attaches great importance to the legends of the Valkyrie or Idisi among the ancient Teutons and Scandinavians, and points out that single individual Shield Maidens may have set out, armed and horsed in search of adventure like the Berserker men of their race. In the battle of Bråvalla (about A.D. 750) which is recounted in the chronicle of Saxo, he speaks of the heiress Guritha, who took part in a battle, dressed in warrior's clothing and then escaped with her son Harald (Book VII.). Further "shield maidens" mentioned as taking part, inflicting or suffering wounds and death in later battles are Stikla and Rusla. And at Bråvalla, there fought, also on Harald's side, Hetha, Webjörg, and the Slavonic chieftainess Wisma. There is also an Icelandic saga fragment which repeats the same names and gives similar details.



In the classical versions of the story it would appear that the original home of the women may be placed to the north and east of Asia Minor and their connection with Artemis also suggests relations with the same locality.

The attempt to establish the existence of early ideal forms of matriarchy has met with signal failure ; and the examples of such cases as those reported by Pogge in the Massumba and Lunda districts in Africa ; by J. S. Kubary in the Pelew Islands ; by Gurdon in Assam among the Khasis, and by H. de Leeuw among the Minangkabau, do not tend towards the conclusion that the existence of matriarchal institutions prove the existence of early forms of society where woman was not debased but exalted.

The Amazonian legends have no support in such beliefs. They depend upon certain concrete historical facts connected, probably, with the participation of women in battle and round which has gathered the collection of mythical tales which often accompany the observation of some unusual event.

We cannot discuss here the origin of the term *Ἀμαζόνες* which has caused much controversy. It has been thought that the name is due to the belief that they mutilated or rather destroyed one of their breasts (*ἄ* and *μαζός*), but this interpretation does not appear to be supported by ancient artistic representations. Bergmann supports the view that the word is connected with an old Circassian word *masa*, meaning the moon, since the legends are often found to have elements which are associated with lunar deities.

Modern " Amazons " exhibit both breasts if we can accept the opinion of the grave and learned Papist who, in 1677, wrote " A just and seasonable reprehension of naked breasts and shoulders." He calls such women " Amazons of the Devil " and explains that God hates nakedness because He is purity itself.]

## 9. THE REINCARNATION OF VITAL SUBSTANCE AND THE ORIGIN OF INDIVIDUAL LIVES

To the idea of mysterious forces residing both in living beings and inanimate objects may be added the belief in the reincarnation of " vital substances " or " souls " in the newly-born members of the tribe, family or community. The African Bakuba are said to distinguish the following non-physical entities : *nshonga*, *mophuphu*, *ido* and *edi dingi*. *Nshonga* passes after the death of its host into the body of a woman and is born again as a child. *Mophuphu* is the last breath drawn by the dying. *Ido* can leave the body in sleep and appear to other persons in dreams. After death it enters the body of an animal (*cf.* the Fylga of the North). *Edidingi* is the shadow. Other tribes believe in " souls " which pass out of the bodies of the dying persons and into those of women to be reborn. But in some cases those who cannot re-enter a maternal body become spectres or " ghosts of the dead."

[A similar idea is found in the Trobriand Islands where Malinowsky investigated it and subsequently published a full account. After death the spirit makes its way to Tuma, the Island of the Dead, where it leads an existence very similar to that it previously enjoyed, with the exception that when age overtakes it rejuvenation sets in. When it wishes to return to earth this is arranged, and it is these rejuvenated spirits who form the reservoir of life, from which humanity draws. Again, another form of the same belief has it that these spirit children come floating towards land attached to various objects which are carried in by the water. Thus when on occasions much flotsam and jetsam have accumulated girls in the coast villages refuse to enter the water lest they may conceive.]



These ideas of "life-stuff" and mysterious forces can be compared with the *mana* of Melanesia and Polynesia, a conception which was fully described by Codrington, and which Speiser considers the foundation of many similar beliefs. He says: "All this complex of ideas is based on *mana*, that protean force, capable of infinite transformation and utilisation. *Mana* may reside in a stone of fantastic shape: in certain plants and trees, in certain personalities; it permeates the clothing and weapons and ornaments in contact with the body and particularly the excretions, the hair and toe and finger nails. If these are burned or destroyed with certain ritual processes, the living body that provided them is also destroyed. *Mana* is potently present in dead men's bones, especially in the skull, and the wish to obtain and appropriate an extra amount of this vital essence may have been one of the impulses leading to cannibalism. Riches and power depend on accumulating *mana* and all the energy of those who hold this belief is concentrated on getting *mana*."

What is the primitive theory of the origin of human life in the individual? Have human beings always known that the sexual act was the spark that set pregnancy in train and led to birth?

Much incentive to the consideration of this question and its implications has been provided by the material collected among the aborigines of Australia and the Trobriand Islands, especially by Roth, Strehlow, Spencer and Gillen, and Malinowsky.\* These investigators have stated that several peoples are to this day unaware of the association between copulation and conception. Their statements have been hotly contested, mainly by dogmatic religious investigators, both Protestant and Catholic; for if this primitive ignorance were definitely proved and universally admitted, it would knock away the foundations of the Churches' teaching of the sanctions of marriage, monogamy and the family.

But the assumption that such knowledge has always existed is strangely abused; let us remember how comparatively meagre and inaccurate was the physiological knowledge of the Greeks. Let us remember that it is only since the days of Leeuwenhoek, Huygens, and Swammerdam that we know of spermatozoa and since 1780 that experiment showed that they must come into contact with ova if fertilisation is to occur. Again, it was not till about 1841 that their cellular origin was shown, the union of the spermatozoon with ovum being observed by Barry in 1843. Moreover, explicit recognition of these difficulties would reflect on the official doctrine of Christian Churches regarding the Immaculate Conception; a doctrine which carries on to our own day the analogous myths of the origin of so many gods and heroes of old; and like all myths, reflects the beliefs and customs of earlier times.†

Primitive man had no clue to the condition of a woman in an advanced state of gestation—for the earlier phases would have escaped his notice—and least of all would it be likely to occur to him that an act of congress five months past could be the cause of the change in his mate. On the other hand, the indispensable connection between pregnancy and childbirth must have been realised by our forefathers at a very early stage in human mental and social evolution. Coitus, however, does not lead soon enough to the unmistakable signs of advanced pregnancy for cause and effect to become evident to primitive minds; primitive man has very little extension of consciousness in time and is far more likely to suppose that

\* [The conclusions of Malinowsky relating to the ignorance of physiological paternity among the Trobriand Islanders have recently been disputed by A. C. Rentoul, the District Officer at Losuia in the Trobriands. His paper, together with subsequent correspondence, should be consulted by those interested.]

† For a general account of early theories of generation, see F. J. Cole.



simultaneous but quite unconnected events or appearances are associated with one another. The contention that human beings must have known the causal sequence of coitus and pregnancy (and, therefore, coitus and birth) from "the beginning" is one of the most preposterous of the beliefs involved in the refusal to accept evolution.

It must be remembered that in really primitive conditions (and among many races to-day), physical virginity does not exist. "Marriage" is universal at puberty, at least for women; and even before that appointed time there is almost always a considerable amount of sexual intimacy even if chastity is demanded in theory as a tribute to the tribal ancestors or a guarantee of racial purity; for only the concept of "moral merit" through deprivation or suffering—incorporated for instance in the creeds of both Buddhism and Christianity—makes sexual activity something to be habitually avoided and condemned. Among primitive races "marriages" involving bodily intimacy are often contracted before either partner is capable of parenthood; the children "keep house" together, have sexual contacts and yet produce no child; a "proof" of the non-inevitability of cause and effect! Curr says that the aboriginal Australian girl is often "married" at eight years of age; while Sadleir found such cases at 10 years of age. Moreover, the promiscuous sexual "play" and genital contacts of savage children hardly ever lead to pregnancy. Thus Jabim boys of 13 already carry on secret relationships with the little girls; and Miklucho Maclay often had occasion to see boys and girls imitating the movements of adult intercourse on the sun-warmed sand of the beaches (see Hagen<sup>3</sup>). Moreover, in communities where a high degree of promiscuity is the rule, the majority of sexual acts are not demonstrably followed by pregnancy. So it seems that primitive man was logically justified in failing to associate these two things, and even now certain races, while admitting copulation to be probably helpful to pregnancy, attach the main importance to supernatural processes.

Others, again, apparently believe that the tribal puberty rites are necessary to enable girls to become mothers of normal and/or living children.

In course of time various primitive races eventually reached a stage of knowledge and consciousness which enabled them to understand that copulation was a prerequisite of conception, or rather pregnancy. But this was not held to be an invariable rule. Even in the nineteenth century the question was occasionally put in all seriousness. We may characterise the recognition of the association between copulation and conception as the second stage in the sexual enlightenment of mankind. It lasted over enormous periods of time and exists still among certain races. The association of cause and effect here is still held to be secondary, and, as it were, ancillary to the actions of supernatural powers. Later in sociological evolution these powers are personified as gods and in the final stages of this phase, the gods become the helpers or even the personifications of the mortal begetters.

Thus we have sufficient indications of the amount of material still available among primitive peoples on this subject, and not only among the aborigines of Australia. The material they offer has been adumbrated or confirmed by the folklore of Africa, Mexico, Japan, Hindustan, and by Slavs, Greeks and Teutons. Everywhere it is manifest that the genesis of human life was a most absorbing and intriguing problem. The onus of proof that physiological processes from intercourse to birth were accurately observed and estimated by primitive man lies on the opponents of evolution and, since this point was made (in 1909) in a study by F. von Reitzenstein,<sup>1</sup> we have learned the important rôle played by *mana* and similar ideas in primitive thought and custom. Men and women were the two primæval social groups; they met, mated, parted, or remained together. There was no



evidence that the moments of casual sexual intercourse were the cause of pregnancies which were only visibly obvious five months later. According to von Reitzenstein, it was only when a more permanent association between man and woman was built up through the institution and extension of property that it became possible to observe facts leading to the recognition of the mechanism of paternity. The first observations of this kind may have been made on the domesticated animals, whose gestation is much briefer than the human span. The key to the riddle in our own species may have been menstruation. Human beings, at an early stage, must have become aware that the menses diminish and cease in pregnant women. But some primitive peoples to-day do not associate the cessation of the period with a preceding act of coitus. Indeed, to many savages, the periodic hæmorrhages are signs of



FIG. 384.—The Erathipa stone showing the hole through which the spirit children emerge, and the charcoal fire line painted above it. (After Spencer and Gillen.)

serious injury or illness, and are treated as such. To quote K. v. d. Steinen in his study of the Bakairí :

“ Suddenly there is a loss of blood which recurs, surely a sign of disease. It is clearly evident that the Indians drew this conclusion when we consider the generally customary and otherwise quite purposeless fumigations, isolation, special diet, incisions and other medicinal methods of treating the pubescent girls. The genital hair was carefully plucked or shaved off and a special bandage, or *urluri*, was enjoined . . . not for purposes of cleanliness but to staunch the flow of blood.” And even after the cessation of menstruation was recognised as characteristic of pregnancy, the impregnating coitus was supposed to have been much later than could really have been possible by about two months.

The Australian blacks believe in plant and tree spirits as the most active agents in reproduction. They are held to enter the woman's body and become children. But the whole process is imagined in very materialistic terms. The spirit child has its abode in a great forest or in the depths of lakes and streams as in our own Nordic folklore. Rocks and springs (Fig. 384) are also sources of life. And all



children born are the reincarnations of ancestral spirits, which enter the mother's bodies in a most matter-of-fact manner; the "spirits" or "spirit children" are extremely minute "almost like grains of sand," and they slip into the navel of the woman, and thus into the interior of her body,\* where they grow to normal size.

Strehlow reports that these ghost babies are believed, even in their original form, to be miniature replicas of little boys and girls, complete in all but size; reddish in colour and provided with souls. They may be enclosed in the fruit of some tree; and if a woman eats this fruit she becomes pregnant by the mouth. The most potent kind of fruit is the *lalitja*, and if this is eaten a *lalitja-ratapa* or *ratapa* "child seed" may take up its abode between the woman's hips. Nor is it always necessary for these plant spirits to be swallowed; they may be diffused as an emanation from certain trees (cf. Fig. 385). Thus the ancestor of all the Black Snake Totem arose in the beginning out of a water-hole at Tennant Creek. He wandered through



FIG. 385.—The Tree of Life. Mexico. Cod. Vat. 3773. (After Seler.)

the neighbouring land and left crowds of spirit Black Snake children behind him perched on the cliffs round the water-hole and in the gum trees. No woman would lightly venture to strike one of these gum trees with a stone axe, as she would fear to release a spirit child from the bark. The aborigines round Cape Bedford believe that boys enter their mothers' womb in the shape of tiny serpents, and girls as snails. Then there is the *churinga* (Bull roarer), a thin blade of wood, pierced and swung round rapidly by a string or thong fastened to one end, thus causing a hissing sound. This sound is attributed to a supernatural being, *Murtu-murtu*, who whistles with his mouth. He was torn to pieces by dogs and his mutilated limbs grew into the trees, from whose wood *churinga* are fashioned. Strehlow reports the belief current among other tribes that the ancestral spirits (*altjirangamitjina*) walked upon the earth and then entered into the earth, where they still live hidden from men. But their bodies became changed into rocks, stones, trees, shrubs, *churinga*, or bull roarers. The seed that makes children is still contained in these things, but is ready to enter any woman who may chance to pass by. The child is

\* For further relevant material on this subject, see Hartland.



then a "narrow face"; whereas a "broad face" is produced if the ancestral totem emerges from the earth and throws a little bull-roarer (*namatuna*) at the woman. *Churinga* are also used more directly and unequivocally to rub against the *kwérka-qúnga* or "child stones" and persuade a child spirit to enter the woman. Strehlow believes that only a few of the older men now are aware of the results of sexual

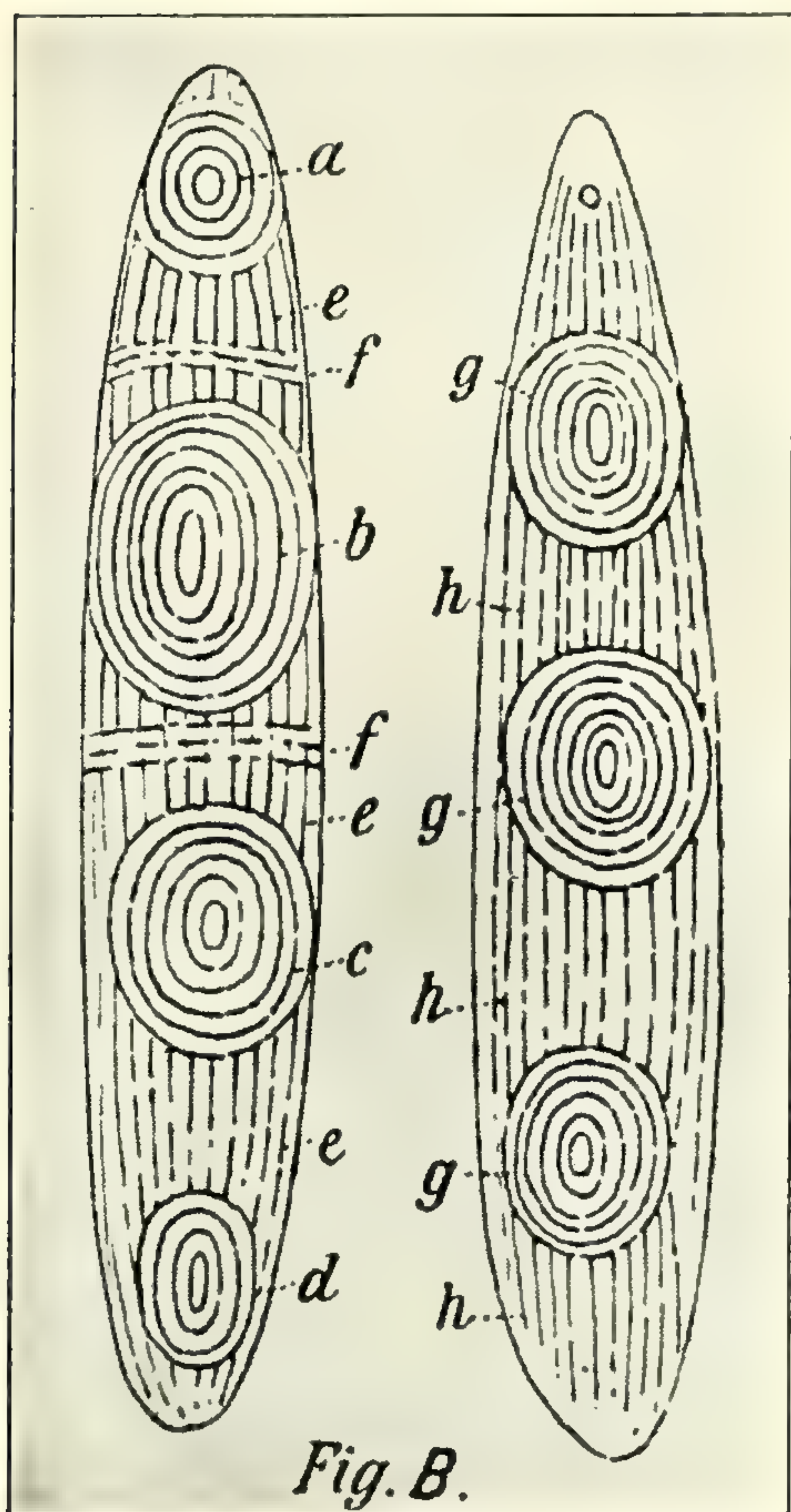


FIG. 386.—*Churinga nanja* of the Ilatirpa of the honey-ant totem. (a) is the eye; (b) represents intestines; (c) the painting on the stomach, and (d) the posterior part of the man. On the reverse (g) represents the intestines of the Alatirpa, a bird. (After Spencer and Gillen.)

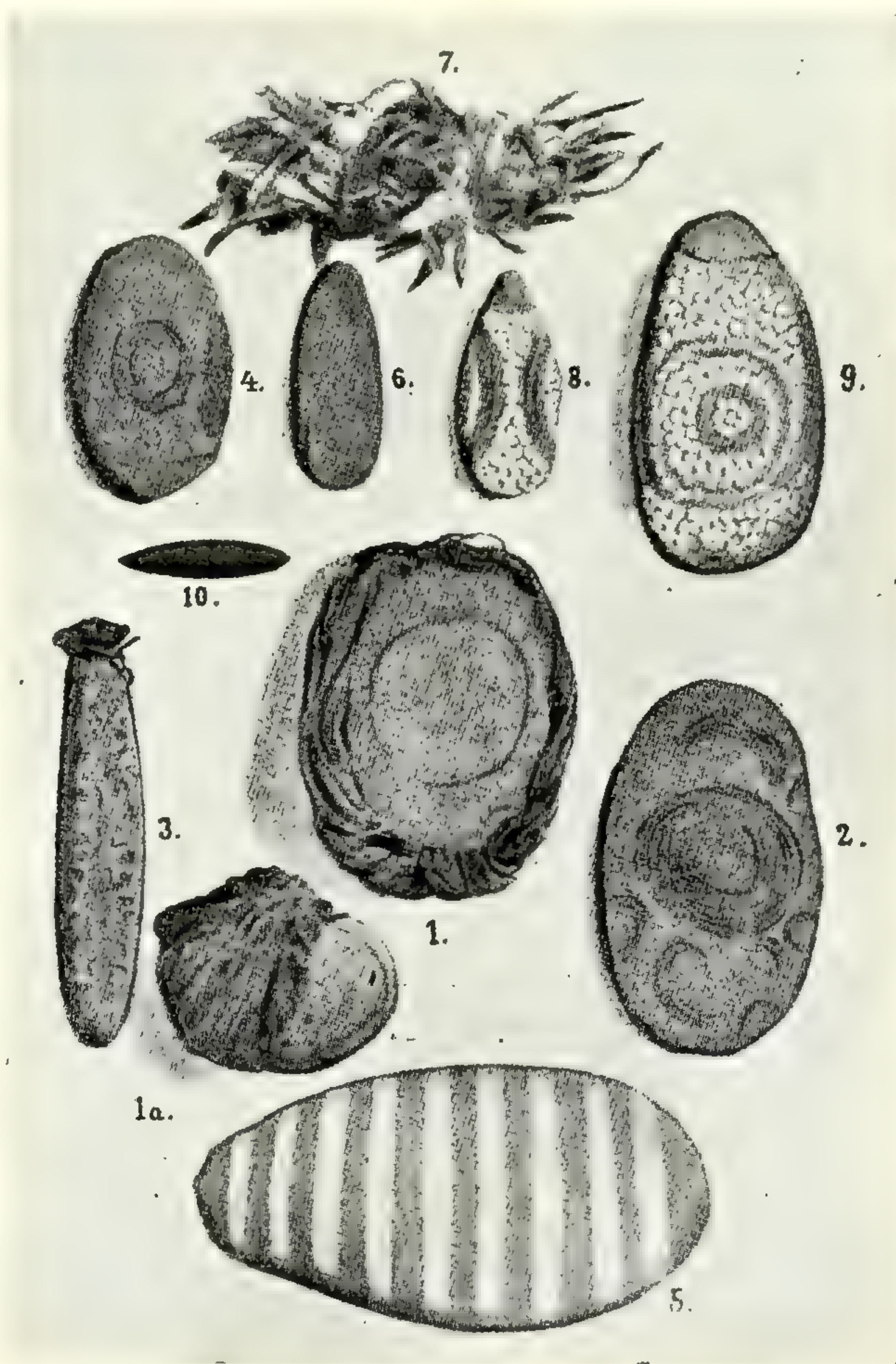


FIG. 387.—Stone *churinga* of the Arunta, Kaitish and Warramunga tribes. 1, 1A. *Churinga* enclosed in human hair string and carried about together, Arunta. 2. *Churinga* of euro totem, Arunta. 3. *Churinga* of water totem, Arunta. 4. *Churinga* of witchetty grub totem, Arunta. 5. *Churinga* of Hakea tree totem, Arunta. 6, 7. *Churinga* and feather covering of the Warramunga tribe. 8, 9. *Churinga* of the Kaitish tribe. (After Spencer and Gillen.)

congress (which is considered simply a distraction), but they keep their knowledge to themselves and from both youths and women.

Strehlow has also shown that both the Arunta and Luritcha know that coitus between animals leads to the birth of young. That is to say, they are already on the way to what we have called the second phase of enlightenment, as mentioned above. As we move up the various cultural strata from the ideas of *mana* to animism, to demonology and deism, actual knowledge has advanced concurrently with belief. There are particularly valuable materials in this connection among the



customs and traditions of Hindustan, and we shall deal with them more fully when reviewing marriage rites. In the second stage of sexual enlightenment, mankind has reached the consciousness that copulation is indeed necessary for conception, but believes that the actual fresh vital spark is kindled by some supernatural power, and, indeed, organised Christianity has not got much further than this, for the doctrine of the soul implanted by God is the foundation of Christian dogma and ethics. Unfortunately, this doctrine has been the means of restricting and inhibiting progress



FIG. 388.—A demon escapes from the mouth of a possessed person.

in the most serious manner, and it still survives and works widespread harm in our present laws.

Among the Hindus the ibis plays the same *rôle* in folklore as the snake and the birds or snails in the legends of the Australian aborigines; young bridal couples pay their respects to the udumbara trees and bring food to the ibis flocks when praying for offspring. Among the Japanese the butterfly and the crane perform the same mythical office, and in Mexico, the red spoonbill. In all Western Asia, from prehistoric times, the winged bringer of life was the dove, which became the holy bird of the goddess of love. The most celebrated instance of this myth is the Immaculate Conception of Mary, Mother of Jesus, and the Third Person of the Christian Trinity was early identified with the dove. In the folklore of the ancient Teutons the stork brought the children; among the Norwegians and Swedes the swan, and among certain other races the snake or the hare. And these messengers were believed to fetch the babies either out of some deep pond or ocean, or out of trees or plants. The tree, well and spring myths of Europe are well known.



## 10. THE RESULTS OF THE IDEAS CONCERNING THE LIFE OF THE EMBRYO

We have pointed out that the Christian religion was involved from the beginning in obscurity on the matter of the origin of human life ; indeed, it was hardly more evolved than the ideas of the savages which we have just reviewed, and its bias has been of injurious significance in European legislation. This has such important associations with the subject-matter of many late chapters that it must be briefly passed in review here.\*

We will first see how our Teutonic and Nordic forefathers viewed and treated the question of the life of the embryo and the ethics of the subject.

### (a) Did the Ancient Teutons recognise from the First the Concept of the "Developing Life" of the Embryo?

As we must admit, we have only very fragmentary and meagre accounts of the customs of our forefathers when they first enter recorded history. We have no written codes for that age. The authority usually cited is the *Germania* (XIX.) of Tacitus.

Tacitus declares that the limitation of offspring was held to be vicious among the Teutons and that their good morals had more efficacy than the laws of others. It would be logical and obvious to conclude from this that there was no law against limiting procreation. And we must bear in mind that modern research has made it indisputably clear that the *Germania* was primarily an ideal picture destined to shame Tacitus' countrymen into altering their habits ; with all its interest and graphic power, modern historians and sociologists test its assertions most carefully before accepting them. In the days of Tacitus Rome had begun to suffer from a swarming slave population on the one hand, and a governing class who deliberately restricted the number of their children. Many statesmen and leaders of old Rome, however, like some in modern Europe, aimed not at the transformation of the submerged section of the people by greater health, intelligence, prosperity and responsibility, but at a "cradle-competition" between rulers and ruled. Tacitus, it appears, belonged to this school of thought. It must, however, be admitted that in his time Central Europe was far from over-populated and its somewhat sparsely scattered inhabitants were constantly engaged in warfare, which kept down their numbers. Thus there might then have been a tenable case for urging the deliberate increase of the Teutonic tribes. Nevertheless, Tacitus admits that there was no punishment for abortion in theory at least.

What about practice ? Grimm and other students of folklore have shown the frequency—in sagas and traditions—of the abandonment and exposure of young children or new-born babies, and these are represented not as abhorrent crimes, but as commanded by kings, etc. We have no Teutonic legal codes of the pre-Christian Era ; the oldest extant law books are subsequent to the contact with Rome and the diffusion of Christian doctrine. But it is clear as day that those in Germany who wish to retain the present ban on abortion cannot base their case on "our true old German usage." For the child's father had the right to decide whether or not the new-born babe should live.

In the Visigothic Code (IV., 4), Christian tendencies had so far prevailed that

\* Freiherr v. Reitzenstein<sup>19</sup> has dealt in a monograph with "the legislation of early voluntary abortion by professional persons."



the ancient custom was denounced as "heathenish." In the Frisian Code, dating approximately from A.D. 800, no fine is laid down for the death of either the newborn or the child in the womb; this means that either might be slain or exposed. But, after "baptism," the child must be kept alive. The *Lex Ripuariorum* (XXXVI., 10), states that he who killed an unborn child or a newborn child before baptism should pay a fine of 100 soldi (see F. Walter). The test here is the baptismal rite: Christian influence is already active on the lines developed later. But the Langobardi kept the older and more logical standpoint: in the *Edictum Rotharis* (eleventh century) there is no fine or penance imposed for an abortion performed with the consent of the woman, her guardian or her nearest male relative. Thus human "rights" were not attached to the embryo. And the two German legal codes of the thirteenth century—*Schwabenspiegel* (South) and *Sachsenspiegel* (North)—do not even mention this practice.

### (b) How Did the Christian View Originate?

Christianity first appeared among the submerged classes and subject peoples of the Roman Empire. The Christian code of ethics grew up in the shadow of the Roman Law.

#### (1) Roman Law

The relevant order is in the *Lex Aquilia*. If a woman had a miscarriage as a result of a blow or injury, this was punished, but only as an attack on the personal rights of the woman (who might desire a child). Roman thought was vitally consistent and logical here, following the line of thought stated by the Greek legal writer Lysias in the year 430 B.C. At a certain stage in gestation the unborn being becomes distinctly human in development; science and medicine are able to demonstrate life though not consciousness. Lysias believed that the foetus acquired a soul or life between the sixth and seventh months, and Christianity at first accepted this view in consonance with the Stoic philosophy, which inspired Roman politics and ethics. And, as such, the unborn being enjoyed no special protection comparable to the status of the adult.

There was no Roman political or philosophical support for the belief in the right of the embryo to life unconditionally, and the early Christians, it appears, did not hold this view. The Biblical texts do not, indeed, altogether support it.

#### (2) The Biblical View

Apparently the ancient Hebrews gave the right to forbid the birth of a life already conceived to the family and its head, *i.e.*, the man who was to determine the penalty if a miscarriage occurred to a woman as the result of an accident. But if the woman herself were hurt or killed, the *Lex talionis* prevailed. If the father or the pregnant woman herself procured a mishap then there was no punishment, for no one was injured (*cf.* Exod. xxi. 22–25).

Thus the distinctive Christian doctrine about abortion is founded neither on Roman Law nor Hebrew. It has been formed and formulated under the influence of the Hellenistic schools of Greek thought, the Peripatetics, Neo-Platonists and Neo-Pythagoreans. Their confused mysticism appealed strongly to the uneducated masses who were primarily attracted to Christianity; and Christianity absorbed this influence all the more readily in that it lacked the intellectual background for a constructive system of ethics.



### (3) Hellenistic Philosophy and the Soul

The later Greek philosophy was based on the teachings of Plato and Aristotle, but its conclusions were very different. Even Plato's philosophy is transcendental and as incapable as any trend of thought could be of giving due weight to a biological matter. Plato preached the flight from the world of sense and matter and the independent pre-existence of the soul. But neither he nor Aristotle ever deduced the notion of sinfulness or communal injury in abortion. Aristotle very reasonably demanded that the number of offspring must be regulated in order to prevent over-population, and this was done by abortion, or by the exposure of already living children. In later times ideas began to change as a result of various mystical speculations.

Hippocrates believed that there was a certain relation between both foetal and embryonic development and the ritual purification of the mother after delivery; whilst the views of Aristotle (*De anim. hist.*, VII., 3) were elaborated into the doctrine that the male embryo was "animated" after 40 days, but the female only after 80 days. Thus the Jewish Platonist, Philo of Alexandria, deduced that abortion was to be condemned. And the Christian doctrine, which was being consolidated and elaborated out of a purely Socialist teaching, rejected both Roman and Hebrew tradition and incorporated the thesis maintained by Philo, for such a view was more likely to appeal to the masses—and the results have been the hindrance of human knowledge.

### (4) The Development of Christian Teaching

The earliest Christian students of moral problems seem to have had a genuine desire to arrive at just and correct conclusions. But they were immediately and inevitably confronted by the need to account for the soul. The *Neo-Platonists* insisted that the soul was wholly distinct from and independent of the body, but it must at some time enter the body. Three schools of thought arose and disputed this question. They were:

(1) *Generatianism* taught that the soul was begotten by the parents, and, therefore, attached to the embryo from the first.

(2) *Traducianism*, i.e., that the soul was not created, but transmitted to the child in the act of congress.

(3) *Creatianism*, which attributed the origin of the soul to God, who made it separately and then allotted its bodily vehicle. This view was to be victorious—but the time of the transference was still not clear.

It appears that the Greek version of the Biblical text in Exod. xxi. 22, etc. (in the Septuagint) was quite erroneous.\* Instead of "injury or no injury," it read "shaped or not shaped."

Tertullian† was himself ignorant of the Hebrew tongue and script, but he blindly followed an inaccurate translation and was responsible for perpetuating the distinction between the animate and inanimate foetus instead of between the injured

\* [The Hebrew version reads, "If men strive together and hurt a pregnant woman so that she hath a miscarriage and yet no harm to her result, he shall be fined, as the woman's husband shall determine, and he shall pay for the miscarriage. But if any harm follow, then shalt thou give life for life, eye for eye," etc. (see Kent, p. 117).]

The Septuagint's rendering of "shaped or not shaped" (*formatus* or *informatus*) does not give the sense of the original text.]

† Tertullian (Quintus Septimius Florens Tertullianus) was born about A.D. 160 in Carthage and died there after A.D. 220. He became a convert in 190.



and unharmed mother. He declared that the seed itself contained the future life, and his view has been perpetuated by ignorance and authority to this day. Tertullian exercised much ingenuity in the attempt to ascertain exactly when the foetus was "animate." Finally he concluded, on the authority of Leviticus (xii. 2, 4 and 5)—which prescribed purification 40 days after childbirth in case of boys, and 80 days in case of girls—that nature took thus long in either sex in order to create the formed embryo.

Jerome\* understood Hebrew and translated the passage in Exodus correctly, but continued the teaching of Tertullian ; thus a grave but inadvertent mistake was perpetuated.

Further teaching was given by Augustine† of Carthage, Bishop of Hippo, after the sexual storms and excesses of his youth and his conversion to Christianity through the efforts of his mother Monica and his friend Ambrosius. Augustine put forward the view that perfect and supreme happiness was in God and built up on the oriental teaching of Manichæism his doctrine of hell which itself arose from the idea of original sin. Through Adam's transgression, only baptism could save from hell though Jesus had made atonement in principle. The souls of the unbaptised were lost, and this was true of the unborn as of the adult.

This was the basis of the legal and moral inheritance bequeathed by Christianity to contemporary civilisation in matters of parenthood and reproduction. It had lost all touch with biological fact, yet many forces still combine to preserve the fabric of superstition and fear.

The view of Augustine was perpetuated in the Decretum of Gratian,‡ which is still the first section of the *Corpus Juris Canonici*. Cap. 9 perpetuated Tertullian's mistake and spoke of the embryo *formatus* and *informatus* ; the death of the embryo *formatus* meant "a life for a life," but, if it were *informatus*, a fine was levied. The logical deduction was that the souls of such unborn children as perished unbaptised after the 40th day of pregnancy were eternally forfeited to hell.§ [For an account of early embryological speculation see Needham, I., 44 ff.]

### (c) The Canon Law and the Secular Arm

Roman law had taken no notice of this teaching. [No trace of penalties for abortion are apparent until A.D. 200.]||

When the Roman Empire became officially Christian the doctrines of Christianity had to be crystallised into penal codes. The Neo-Platonic and Neo-Pythagorean belief that merit was acquired through the "mortification of the flesh" became a social maxim. Constantine punished infanticide with drowning in a sack.

Although Pope Gregory IX. (+ 1241) decided in a test case that the death of the inanimate foetus did not merit the supreme penalty, the German hierarchy (more Papalist than the Pope) had decided that from the beginning the unborn child was human, and the decision that abortion was murder, was affirmed at the Council at Worms in 868.

\* Eusebius Hieronymus, born in Stridon (Styria) between 340 and 350. His adolescence was stormy but soon gave way to the sternest repression and renunciation. He wandered through many lands with the female ascetics Paula and her daughter Eustochium, and founded a monastery and a nunnery in Bethlehem. His most celebrated achievement was the completion of a rendering of the Scriptures into the Latin tongue, the so-called Vulgate. [Cf. Navery.]

† Aurelius Augustinus, born in 354 at Tagaste (Tajelt) in Numidia : died 430 at Hippo.

‡ Gratian published his Decretum about the year 1148 : he was a Camaldulensian monk of the Cloister of St. Felix in Bologna.

§ [For the whole question of infant perdition see Coulton.]

|| [For references to Roman Law see Matthæus and Rein.]



At the end of the fourteenth century the mediæval power of the Church began to loosen its grip on human minds and lives, the spirit of free enquiry also began to recover from the opiate of scholasticism. Side by side with the intellectual Renaissance came the development of political power in numerous independent states and principalities, and as these independent states emerged from the hegemony of the Church they modified or altered their laws, to a greater or lesser degree, according to their local conditions and their relations with the Holy See. The first native German code which stamped abortion as a crime was the ordinance of the Bishopric of Bamberg in the year 1507. The moving spirit in this was, of course, the Prince Bishop himself. For the destruction of the rights and liberties of the individual was consonant with the tendency to gather all power into the hands of the heads of the state and his officials.

The Bamberg enactment treated abortion as murder if the foetus were "animate"; if still "inanimate" the offence was referred to the special consideration and judgment of the competent legal authorities. Thus were mistakes in translation and the speculations of Christian mysticism made the foundation of a German law.

The Bamberg criminal enactment was incorporated in the code of Charles V. (*Constitutio Criminalis Carolina*), usually known as the *Carolina* or Caroline Code enacted at Regensburg in 1532, and thus perpetuated under clerical auspices till modern times.

By the eighteenth century most German States had reached the point of dating foetal animation halfway through gestation. This was the view taken by the Prussian statute book of 1721 and the Bavarian Penal Code of 1754. The latter was the more merciful in that it only punished abortions induced by the woman herself and did not include attempts at abortion. The Austrian penal code of the fanatical Maria Theresa of 1768 included artificial sterility as a punishable offence and condemned to death those who were concerned with it.

The first persons to raise a protest against this irrational distinction between the animate and inanimate foetus were members of the medical profession, especially August Leyser, physician and professor at Wittenberg (1683–1752). The suggestion that there is no special moment of animation in the course of prenatal life did not sweep away the superstitions of the past. Although the correct Hebrew text had been available for centuries, it was ignored by both Church and State. Both merely declared that the product of conception was a living human being from the beginning of pregnancy.

The most eminent jurists criticised and protested; foremost among them the great South German Statesman and penologist, P. J. Anselm von Feuerbach (1775–1833). In his *Lehrbuch*, first issued in 1801, he explicitly stated that it was false in many cases to give full human rights to the unborn product of conception and to treat intentional miscarriage as murder. Philip van der Brœcke was even more emphatic in his publication *De crimine partus abacti*, which appeared in 1830 at Ghent. He maintained that the foetus was part of the mother's body, and, as such, had no special privileges.\* Thus abortion could only be regarded as an injury to the mother, or to the legal father, who had accepted formal responsibility for paternity, or possibly, to the community, which might be directly benefited by an increase of population. Various writers subsequently took the same view.

[The history of legal opinion on abortion in European countries and, indeed, in the majority of civilised communities, has been largely influenced by ecclesiastical

\* Cf. the Roman statement : *foetus pars viscerum matris*.



traditions. The practice was considered an ecclesiastical offence in Anglo-Saxon times, but civil law did not deal with it. Bracton is said to have considered abortion as homicide, and there is little doubt that for the last 500 years it has been thought a serious offence. It was only in 1861, however, that it was stated that a woman who tried to procure her own abortion was guilty of a crime ; and it was only in 1803 that it was made a statutory offence.

Laws vary in the different States of America, and details may be found in the various legal text-books on forensic medicine. (For further details as to legal history see L. A. Parry, A. M. Carr-Saunders, E. Bausset, S. Du Moriez ; and for much curious material from the religious point of view, see Cangiamila : Knapp. For some statistical material on deaths from abortion see Engelsmann.

In Russia the penalties for abortion under the old *régime* were very severe. These penalties were abolished by the Soviets in 1917 and abortion became legal. In 1920 abortions, unless performed by properly qualified persons, became illegal, and in 1924 further regulations were issued (see Villard, Roubakine, Krassilnikian, Halle).]



## CHAPTER II

### THE SOCIAL STATUS AND SPHERE OF PRIMITIVE WOMAN

#### 1. ORIGINS AND DEVELOPMENT FROM PREHISTORIC TIMES

THE evolutions of institutions and concepts and customs with special reference to the status of woman and the relations of the sexes, have been investigated by several authorities, and we have endeavoured to summarise some of their conclusions in the previous pages.

The position of woman in the community is dependent upon the form of tribal or family kinship. Every race attains a more complex and ample way of living, with greater opportunities, security and achievements, when it adopts and practises agriculture, as compared with the nomadic and hunting phases. Agriculture is extremely beneficial to women as compared with the earlier ways of obtaining food. This was already recognised by R. Virchow in these terms :

“ It was only when agriculture had reached a certain expansion and systemisation that it was possible to lay in enough winter provisions to meet certain need and thus give the household a definite security as a storehouse. Women, as the indispensable guardians of the storehouse, attained the position of comparative power and respect which characterises the new cultural epoch. The woman guards and disposes of the heaped fruits of the earth and the community's toil ; she decides the quantity and quality of consumption and becomes responsible for feeding her kinsfolk and brood as yearly resources permit.” \*

The position of woman of the early agricultural communities was a strong one. Her children were hers and her tribe's, that is to say, the organisation was matrilineal.

Bachofen, Lubbock, M'Lennan, Bastian, Post, Lippert, Morgan and other early anthropological writers have dealt with these matters. We have already cited some examples of matriarchal conditions among modern primitive races (see also Ronhaar). Again, according to Powell,† the Wyandote or Huron held that the woman was “ head of the family ” in that the offspring followed their mother's tribe and kin. On the Marianne Islands in the Pacific “ Woman is master of the house.”

This privileged position of women in agricultural communities involved a great deal of very hard work. We can only speak of or assume the actual oppression of women when their share of toil and hardship is very much greater than that of the men. It would be unjust and unreasonable not to admit that where the men have to risk their lives and strain every faculty in order to obtain the rudimentary means of livelihood, their womenfolk cannot and should not live in idleness and comfort. Their task almost everywhere consists in the drawing and carrying of water, the preparation of food, and the making of garments.

In addition to these activities they also help in hunting game and in catching fish, among some primitive races. In a certain number of tribes they are concerned

\* It is significant that the Anglo-Saxon word for queen or “ *domina* ” was “ hlāēfdige,” the bread kneader ; modern version, “ lady.”

† His observations were later revised by Connolley.



with agriculture. When this is the case the men of the tribe take no part in agriculture and the position of the women is a subordinate one.

Much of what we believe about the primitive woman, her duties and her treatment, must be, of necessity, highly speculative. But we may reasonably conclude that—as in all other living organisms known to us, so here also—female lives, activities, achievements and status were closely interwoven with and mainly determined by the reproductive function. The history of human marriage, both in its wider sense as human mating, and in its more exact sense, as involving recognition of paternity, is conterminous with the occupational changes and expansions in evolution. Reproduction and occupation determine woman's position and the train of processes leading up to the reproduction of life is set in motion by specific attraction, by a form of intricate chemical interaction. Human beings have no monogamous instinct or urge; monogamy is a complex achievement not a primitive wish or need. It has been thought that primitive human beings were gregarious, living in herds or hordes, and the young of the species were protected by all the adults of the horde, not only by one special adult and woman. This gregarious and communal care for their young enabled our primitive and pre-human ancestors to survive, to increase, to acquire new hunting grounds and new sources of food and shelter. Nutrition, self-preservation and the sexual impulse combined to keep the first human hordes together. Moreover, both contemporary ethnography and archaeological discovery lead to the conclusion that primitive and prehistoric man is and was essentially "hand to mouth" in his way of living, that is to say, he gathered his food. The hunt came later since it depended upon weapons which could be used at a distance.

According to these theories the primitive horde was endogamous, its men and women lived in "group marriage" and they protected their young in common. There is reason to believe that any intrusion from members of other hordes was much resented, although there must also have been a certain amount of intercourse in very early times, and possibly the capture and abduction of women. The earliest captives from other hordes were probably devoured; then they were enslaved and held a subordinate position. In this supposed society children were an asset to the horde, and thus development proceeded.

Maternity and the consequent period of lactation involved the first division of labour, for man had to provide the food, which was not so easy.

[Although we have summarised the views on the development of human institutions and the position of woman, as they appear in the German edition of the present work, it must not be supposed that such a picture receives unanimous assent. Indeed, the hypothesis of promiscuity, group marriage, hordes and similar conceptions are believed by many competent authorities to be wholly without foundation and to be negatived by many facts which are now well authenticated. There seems no good reason to ascribe mother-right to uncertain paternity although it must be fully recognised that paternity is a matter to be inferred rather than proved. Moreover, recent work on the family in primates lends no weight to the hypothesis of primitive promiscuity and it is unlikely that future investigation will support the idea. The study of the evolution of woman in human institutions is not to be understood, as Langdon-Davies has pointed out, by any appeal to conditions the existence of which is exceedingly doubtful. For those who wish to obtain a summary of the facts and a criticism of the hypothesis of promiscuity, Westermarck's "History of Human Marriage," Vol. I., Chaps. III.–IX., will be useful.]

The division of labour between the sexes is not absolutely rigid in every primi-



tive people. Thus, Parkinson describes the constant and inseparable companionship of husband and wife among the Gilbert Islanders: the wife carries her husband's shield and food when he goes on a foray or a fishing expedition. But she may not accompany him to the Great Assembly House (*Te Maneape*) of the village for dance and sport; these diversions are over for her when she becomes a wife; she is supposed to stay at home during his absence and if her spouse does not find her at home to greet him, she is severely beaten and may not complain about it.

Division of labour and mutual help are often heavily overweighted against the muscularly weaker partner. The man goes to the tribal assemblies, hunts, fishes, goes to war. Prince von Wied gave a striking account of the overloading of the



FIG. 389.—Windscreen as dwelling, Pano Indians, South America. (After v. Wied.)

Botocudo women with all the material possessions of the tribe as well as two or three children, when the tribe was on the march, while the men carried only bows and arrows, which were a necessity in order to be prepared for hunting and to ward off attack. (Figs. 390 and 391). Wedell says of the Fuegians that their men showed much attention and demonstrative affection for the women, but, nevertheless, put all the work on their shoulders. The Samoan girls' life, on the other hand, is apparently mainly *dolce far niente*; a little light cooking, sweeping, and plaiting, much personal adornment and gossip, much social life and converse with young men.

It is certainly very difficult to arrive at a just and accurate estimate of the overworking of women in primitive communities: European standards and sentiments may distort perspective. Pechuel-Loesche gives a very clear and graphic description of the customs in Loango (West Africa), bringing forward considerations usually



ignored. "The free man—or the serf who has paid a ransom to his master and is able to work independently—hunts, fishes and barter his goods along the coast.



FIG. 390.—A Botocuda family travelling. (After v. Wied.)

The free woman is busy at her hearth ; her hearth fire is usually kindled under the open sky but it burns for her alone and she may forbid her husband to warm himself



FIG. 391.—Pano Indians travelling. (After v. Wied.)

beside it and refuse to cook any food for him if she so desires. Then he must roast flesh or fruits at a fire kindled by himself, as though in the wilderness, or let his servant cook them. He has the duty of supplying game, fish, condiments,



fruit, palm oil and such goods as can be obtained by barter. She brings vegetables and other necessities, grown by herself or bartered for; and she often collects shell-fish. What she obtains as produce from the field she tills or from the animals she tends—beyond what is needed for her husband—is hers. Her husband has no right to one root from her basket load, nor one egg from her hen-run unless they married on the understanding that their goods should be in common. She does not work any harder than he does and sometimes certainly a good deal less. Moreover, in Africa, as elsewhere, the way to a man's heart is through his stomach. A prosperous and competent woman occupies her time according to her own inclination as she does among ourselves. . . . They are much better off than many girls, wives and mothers in civilised conditions who live without sufficient food and in a state of perpetual need, and among whom one can find true beasts of burden such as cannot be seen among savages."

An important factor in estimating the position of women in primitive communities is her relation to magical religious cults.

## 2. WOMAN IN MAGICO-RELIGIOUS CULTS

[There is some reason to believe that in various societies and at various times women have played the part of the principal actors in those magical and religious dramas which are connected with the supposed existence of an unseen world. Certainly as civilisation progressed "wise women" became noted for their knowledge of the world of spirits and of the best methods of dealing with them. As priestesses, prophetesses, sorceresses, witches and mediums, women have played a prominent part in magico-religious ceremonies, and their influence in these directions to-day is by no means inconsiderable. In a discussion of the reason of the emergence of woman in this *rôle*, Lippert, although handicapped by what are now considered erroneous beliefs as to the historical steps of female evolution, offers a few interesting suggestions.]

He thinks that the attitude of primitive man to supernatural beings was essentially propitiatory: he sought to avert terrible disaster and obtain efficacious help by means of gifts and of actions pleasing to the gods. Moreover, he believed that the needs of these gods or ghosts were as primarily physical as his own and that hunger and thirst were predominant even in the spirit world. But who was better able to feed these needs with a continuous supply of acceptable offerings than she who fed all young and helpless things, the Mother? She was able to fix the attention of the ghosts or gods on the cave or hut and daily she prepared the meal, however scanty: whereas, the man's luck in the chase might fail. He, too, summoned the mysterious ones to partake of the meal his prowess had provided; he also offered them his favourite drink, the hot blood that gushed from the death wounds of slain animals and slain foes.

Saxo-Grammaticus speaks of the ancient hearth magic of the Baltic Slavs. The mothers of the families sat by the hearth stone and drew lines among the ashes, carelessly and without looking at what they drew. Then the lines were counted, in reply to important questions on which enquirers sought light, and the inspired answers were read in an alphabet of odds and evens.

Cæsar records that the Teuton matrons cast the lots which decided peace or war for the tribes.

The children of Israel had Deborah on the one hand and the Witch of Endor on the other; the inspired prophetess and the sorceress. [We meet the same conditions among primitive peoples and Quanter has dealt with the position of woman in relation to various cults in his "Das Weib in den Religionen."]



### 3. THE SOCIAL STATUS OF WOMAN IN OCEANIA

We shall deal more fully in a later section and chapter with the primitive marriage concepts and customs. Waitz discusses the social position of women in Fiji. He says :

“ The wife is her husband's property ; property bought by him from her parents. As a rule, he is at liberty to drive her into the wilderness, lend her, exchange her, or sell her outright for the wherewithal to purchase new wives, etc. The most unlimited and arbitrary power is exercised by the Fijian husbands. Among the common people on the Fiji Islands, the women are, according to Wilkes, simply wares, bought and sold in the market and may be slain and eaten by their husbands with complete immunity from either communal punishment or private revenge. A man's wives are often inherited by his son, like a house or a piece of furniture. Only the wife, never the husband, can commit the offence of adultery.”

Among the Australian aborigines women's status is very low. They are often carried away by force or sold as children, and till death they are at the mercy of their men's caprice, even in its most brutal moods. Polygamy is universally permitted ; the man buys wives according to his means, and the more wives he has the greater his distinction and power. Often very young girls are handed over to men four or five times their age. There are various methods of wooing : sometimes the girl is bought from her father with some valuable gift ; often she is dragged off by main force and raped. But she must always be a member of another group than her husband ; marriage or sexual relationships between members of the same class are viewed with horror and punished with death. Adultery on the wife's part is also punished with death if committed on her own initiative, and her seducer is punished by his own class. The men frequently lend their wives to friends. Widows and young girls are not bound by any chastity regulations.

On marriage the girls go through a formal rite which apparently consists in the mutilation of the little finger of the left hand ; this phalange is bitten off by another married woman. According to Waitz, marriage and copulation of the Australian blacks generally take place during the warm season when there is abundant food available.

The work (outside hunting and forays) is done by the women ; if they do not perform their tasks to the man's satisfaction or if they otherwise displease him, he beats them mercilessly. The women are excluded from the magico-religious ceremonies of the tribe and may not eat until the men have had their meal. Nevertheless, they appear to be deeply attached to their husbands. If a man dies his uterine brother inherits his wife and children ; the children belong to their mother's totem (Waitz).

The peculiar status of women is evident in cases where it is reported they are fed like cattle for the slaughter, killed and devoured. Such cases have occurred on some of the islands of the Pacific, and the belief in the possible appropriation or reincarnation of *mana* or the soul is certainly one contributory factor to this practice.

One of the most detailed and well authenticated cases led to the despatch of a punitive expedition to the island of Nissan, where the practice had occurred ; and Thurnwald, who was a member of the expedition, gives a full account of it. The victim was a woman from Buka island, married to a man of Nissan, who died ten months before she was killed, for, as Thurnwald states :

“ The women chosen by preference for these cannibal feasts, are those with few or no near relatives. Widows are especially liable and are also otherwise considered and treated as common



property of the whole village. The woman in question, whose original name was Karás and who was known as Huenót, had lived with two chieftains since her husband's death. Salín, of Malés, was her mate for five months and she was pregnant by him at the time of her death. Salín at first objected to hand her over to his creditor Somsom, of Banjalu, near Siar, a well-known cannibal, to whom he had promised her. But, finally, on the appearance of the killer, Mógan, of Torohabau—who had received as prepayment, a pig, two bundles of arrows, each containing 16 shafts, five bracelets and a knife—Salín gave way and held the wretched woman, who had had her hands and feet tied, while she was slashed and shot to death with arrows by Mógan and two of Somsom's men, Sinai and Nataweng. The body was dragged to the beach, rowed over to Somsom's island and stored over night in his house. Next day, she was roasted, and then there was an elaborate *kilué*, or cutting up and division of the roasted flesh among the 13 men of Siar and the neighbourhood." Further details are added by Thurnwald. Men are occasionally devoured, but only when killed in battle. Women are fattened up and exchanged for one another as cannibal dainties; Somsom persisted in obtaining Karás from Salín, for he had already presented him with a woman named Li for food and was already fattening another victim.

As a final characteristic fact we may record that there is a firm conviction among these people that to devour the roasted flesh of a woman stimulates and increases genital potency.

Moncelon has given an account of the position of the native women on New Caledonia. They are, according to him, beasts of burden to the men and are inferior both morally and physically. They submit to the caprices of the men and appear satisfied with their condition. They can be sold, but generally with their consent, although the contrary is sometimes the case. They are even deficient in maternal instinct, showing far less attachment and care for their children than the men. Moncelon refers their general degradation to the oppression they suffer.

On the Admiralty Islands, according to Thurnwald,<sup>2</sup> men and women have sharply distinct property division and inherit from each other. The men own the houses, the herds of swine, the coconut and betel trees, weapons, nets, baskets and pouches. The women own the cauldrons and pots, the slings for carrying baskets or pouches, small nets, certain baskets, stands for keeping food, needles made of the bones of bats, etc. There is even a special currency for women alone; the grey rounded berries of a native shrub (*Lacrima coix*), and it is said that the men have no power over the objects owned by the women.

The conditions and customs in New Britain include severe laws against the marriage of blood kin.\* In every tribe there are two classes, and only members of these different groups may marry one another.

In spite of these harsh customs and the heavy load of work laid on their women, the natives of New Britain have considerable influence, both active and indirect. It is very rare for their husbands to conclude any bargain or agreement without consulting the wives and there is generally some special favour or advantage for the latter in any bargain which is ratified and goes through. They take part in the skirmishes and forays between the tribes; they carry their husbands' spear and shield and encourage them in battle with applause. The women and girls are strictly forbidden to enter the assembly houses or to take part in religious rites, and the husband has power of life and death over his partner. Moreover, there is already a distinct prostitute class.

The missionary Zahn gives some particulars of the sums in kind paid for wives among the Jabim of New Guinea. One chieftain's daughter-in-law cost him two boar's tusks, five large

\* Cf. J. G. Frazer: "Totemism and Exogamy," II., 118 ff.



nets, five anvils, three pieces of cloth, one pig and the expenses of a meal. On another occasion, the price was two boar's tusks, one dog slaughtered for food and the costs of the banquet; on a third occasion, three boar's tusks, one pig and the costs of the banquet.

On the Malay peninsula Miklucho-Maclay<sup>8</sup> met and described a very primitive race, quite distinct from their Malayan neighbours and apparently of Melanesian stock. They are known as the Orang Sakai. Their women are treated with great consideration and may even, in certain circumstances, become chieftains, for the chieftainship is hereditary. On the marriage day the bride is given a certain time to flee and conceal herself; then the man starts in search for her: if she is found she becomes his wife; if not, he must relinquish all right to her. In a tropical forest an agile girl, acquainted with the country, has a great advantage, and it is reported that no unwilling maiden is ever found. The largest possible number of kinsfolk and fellow-tribesmen assemble to act as "starters" and see fair play, and there is a rigid time limit.

In certain districts there is said to be a sort of group marriage\* among the Orang Sakai, practised in a pre-arranged succession and rotation, not simultaneously and indiscriminately. The Catholic missionaries resident in Malacca described this to Miklucho-Maclay and confirmed its truth. The children of these group marriages, knowing no individual father, remain with their mothers.

Stevens found that the women of the Bělenda had the highest status of all the Orang Hutan group of tribes. So long as they are unmarried these Bělenda women may own property absolutely and independently and take part in the family councils. Next to them in privilege and respect come the savage Panghans women, then the Těmiâ (Tummiyor), then the docile Měnik or Sěmang, and lowest of all, the Jâkun, who simply treat their women as beasts of burden and child rearers.

Montano visited the village of Balanga on the island of Luzon in the Philippines. He reports that the indigenous Negrito tribes, who live in the recesses of the woods and hills, no longer buy their wives. The prospective father-in-law is given a present by the bridegroom, but the former also gives several useful articles to his daughter, the bride, which are in no sense a dowry but her own exclusive property. The betrothal ceremony is remarkable: man and girl each climb a neighbouring tree and the chieftain pulls the branches so close together that their foreheads touch. This concludes the ceremony.

In Micronesia the women enjoy a good position. They are not compelled to perform all the heaviest tasks of the daily routine; they devote themselves to household cleaning and adornment, cooking, mat plaiting, the making of garments and certain accessory help in fishing. In their manners they are gentle and their personal habits are modest and dignified.† There was no chastity required for the women and girls before marriage; thus, on the Ratak Islands they were offered to Kotzebue and his crew, but for one night only. Marriage, once celebrated, was strictly respected. Where it was entirely a matter of mutual consent, as on the Marshall Islands, it could easily be broken (v. Chamisso). Only the chieftains and men of wealth could afford polygamy. Another significant social institution is the matrilineal inheritance of rank and official status in certain Micronesian communities, for instance, on the island of Yap (Caroline group) and the Ebons (Marshall group).

On the Pelew Islands the women have their own administration as distinct from that of the men. Nevertheless, the head chieftain of all is a man, the *Adjbatul* (Captain H. Wilson terms him the *Abba-Thulle*, Semper the *Ebadul*). He must

\* Cf. Westermarck's "History," I., 121.

† Cf. Cook's experiences in New Zealand as related by Hawkesworth.



come from the seat of government *Adjdit*, and his eldest female relative—*i.e.*, the eldest woman of the same stock—is the chieftainess of the women. She has a succession of subordinate chieftainesses and deputies who keep order among the women, as their male counterparts among the men. They have their own courts of justice and no man may interfere with the procedure or with the sentences they pronounce. The form of succession goes by seniority, from brother to brother or sister to sister, till the older generation is extinct. The female aristocracy is termed *Raupakaldit*, and the chieftain's wife is never the chieftainess of the women (Kubary).

There is also a kind of communal marriage. The unmarried live in great joint houses (*Bay*) or "clubs"; the men of these houses are called *Kaldebechel*, the women *Mongol*, and they have sexual relationships with each other indiscriminately within the "*Bay*." But this is quite distinct from what we know as prostitution.

These institutions are combined with or contribute to a high degree of female independence and consideration towards women on the Pelew Islands. The women can become authorised intermediaries between the living and the world beyond; *i.e.*, they may be magicians or "*Kalit*," as well as chieftainesses. There is a certain amount of polygamy, for two women can contribute more food to a household by their field work than one. No one may strike a woman with impunity, nor address her in terms of insult, and if such should be used towards an *Adjdit* woman the offender is fined as large a sum as though for manslaughter. If he is unable to pay he must flee the islands, and that soon, or he is done to death by the women. There is a strict standard of public decency; no man may behold a woman without her *lava-lava* or skirt, except in the privacy of the household; men are, therefore, expected to shout in warning of their approach when in the neighbourhood of the bathing places along the shore. There is a strict etiquette forbidding men to talk publicly about another man's wife or to mention her by name.

Thus there is dignity and a certain standard of morals, together with almost complete freedom of sexual relations between boys and girls from their earliest childhood. There is no "family life" as we understand it, for the sexes live apart for most of the time.

Among the Polynesians the girls have appeared to Europeans as free from sexual restrictions of any kind; but this can hardly be the case, for on certain of these islands, *e.g.*, Samoa,\* the affianced bridegroom performed digital defloration of the bride, in public if she were a chieftain's daughter, and before her kinsfolk at home if she were of lesser station. Polygamy is frequent in Polynesia but poor men can only support one wife, whereas the chieftains generally have half a dozen, and others according to their rank and station.

In spite of great freedom adultery is severely punished; but the husband can "lend" his wife if he is so disposed. Moreover, in cases of the so-called "blood brotherhood," a covenant of friendship, in defence and attack till death, the two men promise to share their wives in common. Polynesian romance and history is, however, full of cases of genuine and devoted attachment between men and women; and the island women often showed deep love for their European mates, whether these were temporary or permanent.

Kubary, Mead, and others have depicted the easy-going, sunny, friendly life in Samoa, where personal adornment, gossip, hospitality and visiting (*malanga*) take up so many hours and so much attention. Dancing, in which the Samoans are adepts, also claims much of their time and energy, as we shall see in considering their marriage rituals.

\* Cf. M. Mead.



#### 4. SOCIAL STATUS OF WOMEN AMONG THE AMERICAN INDIANS

Among the aborigines of North America the division of labour is generally on simple lines. The man feeds and defends his family as a hunter of game and a warrior, while household tasks are relegated to the woman; she also prepares the food and attends to the children.

Mrs. Eastman lived for years among the Sioux and got to know their ways of thought and life. She gives a very gloomy picture of the fate of the squaw from birth to old age.

The North American Indians were divided into tribes and special totem groups, and the totem members are considered akin to one another and marriage is only permitted with members of another totem group. Among the Ponca and Omaha the paternal uncle often adopts the orphaned children of his dead brother but without practising levirate marriage. Moreover, a considerate husband would often advise his wife to marry a second time into another totem if he knew his own kinsmen were not of much account.

Among the Tlingit of the Pacific Coast the women's position is more favourable; they have clearly defined customary rights and much influence; they often have the decisive voice in concluding bargains and commercial arrangements. According to the early explorers of the Pacific Coast, Douglas and Vancouver (as cited by Krause<sup>1</sup>) in some of the tribes of that region certain women were so highly honoured that they seemed to be the rulers and leaders of the men. In many tribes the death of a woman was mourned with impressive ceremonial by her widower. Krause<sup>2</sup> reports that the Chilcat Indians (Tlingit, Alaska) had the custom of cremating their dead, and when a married woman died and was cremated, the widowed husband renounced his property and divided it among his kinsfolk.

On the coast of British Columbia, among the Koskimo and Quatsino Indians, a woman, the daughter-in-law of the headman, had the office and power of chieftainess, and she was the most powerful and important individual in the neighbourhood. She took the traveller Jacobsen under her special protection and helped him considerably. She is described as already advanced in years, and her skull had been artificially compressed into the conical shape admired by her tribesmen. Jacobsen told M. Bartels that the women of the Tsimshian tribe were allowed to become "medicine men" or magicians.

In the seventeenth century the women of the Iroquois had their special assemblies whose decisions and desires were communicated to the general assembly and fully considered by the latter (Parkman). If a woman were slain among the Huron the family of the murderer was fined more heavily than if a man had been slain: in the latter case thirty articles were exacted, and in the former, forty—for the continuance and increase of the tribe depended primarily on the women (Parkman). There are also accounts by early explorers of the position and privileges of the women of the Chibcha people, who lived in Colombia and whose civilisation is now dying out. According to Zerda, an observer once saw a chieftain tied to a post or pillar in his abode while three of his wives beat him unmercifully, for he had indulged heavily in drink. In the aboriginal civilisations of Nicaragua the women were also in a good position.

Among South American Indians there is much difference in the position accorded to women in the various tribes and regions. C. F. P. v. Martius noticed and recorded that domestic supremacy is not generally accorded to the younger women who might be supposed to have the influence of greater personal attraction, but to the



oldest female member of the household, or the first wife among many. Among the Peruvians the men even undertake a share of the domestic work which is usually left to the women. Among the tribes of the Juri, Passé, Miranha and others the first wife is mistress and superior to the rest, and her hammock is hung next to her husband's. There may be five or six other wives, but they are economically expensive. Each woman has her own hammock and generally her own hearth as well, especially when she has borne a child. The husband is generally feared by



FIG. 392.—Eskimo women (Labrador) melting seal blubber. (Photo, Niesky.)

these women, and he only acquires a semblance of peace from their intrigues by extreme strictness. The tribes of the Amazon basin are in the habit of seeking wives from other tribes and women taken captive in their forays and petty warfare. Others, again, win their wives by purchase or by service in the father's house.

Dobritzhofer remarked that the South American Indians change their wives more frequently than Europeans their clothing, but almost always the women have their own separate huts or tents, and among both the Carib and the Chilean tribes the rights and duties of the polygamous wives are arranged and systematised by immemorial usage. Frezier says that in Chile the Indians have an alternate



system : the particular wife who has spent the night with the man cooks for him on the morrow, as well as saddling his horse and cleaning the hut. Among the Carib, the wives, according to Du Tertre, took turns, a month at a time. Schomburgk, a modern traveller, had occasion to observe very brutal treatment of the women by their men.

Sachs<sup>2</sup> was impressed by the apathy of the women of the plains of Venezuela and the emptiness of their lives. Their households are rudimentary and their only useful occupation is the occasional tillage of a strip of soil, which produces bananas or manioc.

Sachs saw a young girl rocking a pretty baby on her knee and indiscreetly asked the father's name. The girl shrugged her shoulders : "*Quien sabe ?*" (Who can tell ?)—the same reply was made to a similar question by Head at the other extremity of South America in the Pampas of the Argentine Republic. But the respectable Venezuelan bourgeois introduces his "*senora esposa*" to his guests and treats her with consideration and respect though their union is one of free mutual choice without any legal sanction. If the marriage is not a success it can be dissolved by mutual consent and new ties formed ; the children's future and domicile being settled by arrangement.

In Mexico, until the arrival of the Spaniards, the women had a very subordinate position, marriage being an affair of barter between the husband and the women's relatives. She herself was paid for and marital infidelity was heavily punished. But the man possessed the right, according to Bandelier, to have concubines if they were not already belonging to some other man.

## 5. SOCIAL STATUS OF WOMEN AMONG THE AFRICAN RACES

[Among a great number of African tribes we find examples of marriage by purchase in which the so-called *bride-price* plays an important part. The earlier writers, who were not fully cognisant of the many complicated factors underlying these customs, were, as will be seen, apt to emphasise the commercial side of the transaction ; the view, however, with regard to the purchase of wives and the payment of *bride-price*, has undergone considerable modification in recent years. The transactions which take place when marriages are arranged are now regarded as acknowledgment of obligations rather than as wholly business dealings. Their social and ceremonial significance, as well as their economic, are now recognised.]

Hartmann<sup>6</sup> and Junod have given a classic account of the life and work of native women in Africa. Hartmann says that the division of labour follows traditional lines ; the man hunts wild animals, tends flocks and herds, wages war, drinks alcohol and takes part in councils and assemblies which discuss the affairs of the tribe or the village. The domestic and agricultural work is mostly undertaken by the women, as well as a certain amount of primitive industrial work, but details vary with the climatic and cultural environment. Thus, among the Funj, Shilluk, Nuer and Bari, the men help till the fields, which is not the case among the South African races. The women build the huts, till the fields, prepare the meals, grind the cereals ; they spin, weave and prepare the ox hides for clothing purposes.

Felkin has given quite a rosy account of the treatment of women in the Madi tribe of the Upper Nile, where there is an accepted code of politeness towards them.

Polygamy on a large scale is characteristic, not only of Islam in Africa, but of primitive paganism as well. The chiefs of certain well-populated regions are recorded as masters of enormous harems ; the evils of the system are, to some



degree, mitigated by the separate household. Thus, in Sennaar, the wives live apart, each in her own tent or hut, and, according to Merensky, each Zulu woman has her own hut, enclosure, garden and household goods. Nevertheless, the Zulu are extremely patriarchal; they are herdsmen, and girls are bought from parents for so many head of cattle. The usual sum is five, but ten are sometimes paid. Sometimes marriage by purchase is modified into marriage by service, but, once a wife, the woman is a servant. She may be repudiated and returned ignominiously to her kinsfolk, and her price demanded back, but sterility is the only recognised ground for divorce. Four wives are considered the minimum due to the social recognition of a chieftain. The first wife is always senior and chief of the women, and often urges the man to take a second to help her in her work and serve her. All the women have their own little dwellings.

The missionary, Beste, gives an account of the fights between women, following personal affronts and differences of opinion. He was stationed at Bethel in Namaland, and had opportunity to observe the duels, for the challenger appeared before her opponent's hut supported by a seconder in due form, and called her out. The place chosen was generally on some river bank and the challenges were very seldom refused or evaded. Sometimes there were witnesses, but not invariably. The combatants stripped to the loins and then began to fight with fists and feet, teeth and finger nails. Many women bear the marks of these bites so long as they live and lose portions of their ears or fingers. They scream abuse at one another while grappling and tearing till, finally, one of them is exhausted and admits her defeat. No one would ever venture to attempt to intervene on these occasions.

The Barolong tribe (Bechuana) have the custom of marriage by purchase. There is a regular tariff, graded according to the wealth of the bridegroom and the importance of the bride's parents. The usual minimum price is five head of cattle, but Cameron knew of a case in which forty-eight kine were demanded and paid. The bridegroom builds a hut for his bride, and both his parents and hers pay for the marriage feast according to their means, and the bride's father leads his daughter to her new home. But if a vigorous young Barolong girl dislikes a possible wooer or even a husband to whom she has been handed over, she defends herself, and shows no hesitation in using fists, nails and teeth. The Barolong consider virginity important: if a man thinks he is deceived he can send his bride back and get back his cattle, and the same is the case if the woman is barren. The lover of a married woman is obliged to pay a fine in cattle to her husband or father. In former days, sexual intercourse of Barolong women with white men was punished with death. The ancient usage for young married couples was that they lived in the house of the bride's parents till her first child was born. Then the young husband took his wife to a new home, leaving their first-born to be brought up by the maternal grandparents as a substitute for their daughter (Joest).

Among the Herero of South-West Africa the daughter of a village chieftain has special duties and privileges. She has to watch over the sacred fire which is kindled and fed in her hut; at evening she carries a lighted torch out of her hut as a signal to begin the milking of the village kine. She has also to allocate the boys of the tribe to the different castes or sections into which the Herero are divided; each "caste" or group may only have cattle of its own special colour (Pechuel-Loesche<sup>2</sup>).

Wangemann has described the subordinate position of the Bavenda and Batlaka women; the former tribe lives in Northern Transvaal. Wangemann was on a visit to their chief, whose principal wife entered the hut on her knees with gestures of



homage and placed food prepared by her before the chief and his guest. In the Batlaka territory a passing group of women threw themselves on their knees before Wangemann and his companions and made gestures of homage, then they crawled past them on their knees.

Merensky's account of the Transvaal Basuto is very similar to his description



FIG. 393.—Ulad-Nail girl. The women are said to earn their dowries by prostitution before marriage.

of the Zulu women and family life quoted above. He emphasises that the women have quite clearly defined duties, but that the death of, or injury to a woman is fined as heavily as in the case of a man, and that the corn and produce grown by each woman in her own garden may not be touched without her consent by anyone, even her husband.

Among the Ashanti only the chiefs may divorce or dispose of their wives.





FIG. 394.—Ulad-Nail girls in the street in Biskra. (Coll., v. Oppenheim.)

The Dinka woman has a far inferior position. She is simply property, and has no right of inheritance, passing with other goods and chattels to her husband's next-of-kin if he dies first.



The Manganya (Anyasa), on the other hand, treat their women better than the neighbouring peoples, and this comparative enlightenment is ascribed by some to their agricultural livelihood. They have a formal purchase of the wife by her husband, but it is a mere symbolical formula, for the price handed over to the girl's



FIG. 395.—Woman from the Gold Coast combing her husband's hair.

parents is a hen. Women may even attain the highest office of chieftainship of their tribe.

The nomadic Arab tribes of the Sahara treat and view women as slaves, but according to Chavanne they enjoy a certain amount of freedom. Polygamy is customary and welcomed by the wife, as it means that her burden of household toil is lessened. Her allotted tasks include the fetching of water from the wells, the gathering of firewood, the grinding of grain between two stones, the milking of camels and ewes, and the cooking of meals. In addition, she spins yarn and weaves





FIG. 396.—Algerian woman grinding meal in a hand mill. (Photo, N. D.)



the materials of her husband's burnous and haïk, the horse cloths, the carpets and cushions that furnish the tent and the canvas of the tent itself. In her youth she is extravagantly praised while desire lasts, but she ages soon, and then becomes a slave to her supplanters. Chavanne has noted certain individual cases of dominant



FIG. 397.—Ama-Xosa women carrying building materials.

influence exercised by these women ; and it is to be noted that the nomads of the desert, though Moslem, do not invariably veil their women.

Among the Tuareg of the Sahara the women occupy a rather high social position. They profess allegiance to Islam, but are habitually monogamous. The women are taught to read and write and become as proficient in these arts as the men. The Tuareg women have as much freedom of movement as those in contemporary Europe ; the wife administers the household and the joint property, and her rank is inherited



by her children. The Tuareg women are considered very handsome, and are dignified and reserved in their treatment of foreign men. They are true Amazons, showing prowess in horsemanship and the chase, and take part in forays and tribal warfare.

A Berber tribe furnishes the most fashionable dancers and prostitutes of both the coastal cities and the towns of the interior. These Ulad-Nail\* girls go far afield and earn their dowries by prostitution, returning to their tribe and domesticity when they have acquired enough (Figs. 393 and 394).

The indigenous inhabitants of the Canary Islands were known as Guanches, and the Spaniards, who first conquered them, found many curious institutions and customs among them. On the Isle of Lancerota, polyandry was practised, but the



FIG. 398.—Zulu family before a hut.

head of the household was always a man, each one of the joint husbands occupying this position in turn for a lunar month at a time.†

Figs. 255–257 and 395–398 portray African women at work, carrying great vessels of grain or water, or grinding corn at a stone handmill of the same design as that used in the Roman province of Africa. The more prevalent pattern for hand-mills or querns in Africa is similar to that used in prehistoric times. The grain is thrown on a large flat stone and crushed by means of a roller, about as thick round as a man's fist; this form of quern involves greater effort, which is generally exerted in the kneeling posture. (*Cf.* Fig. 256.) There is another method in use among a few African tribes; the corn is stamped down in large mortars.

## 6. THE SOCIAL STATUS OF WOMAN AMONG ASIATIC PEOPLES

The peoples of Arabia treat their women as definitely inferior, and certain Arab theologians have denied women any place in Paradise, whilst in Mecca no

\* [See Soleillet, p. 118.]

† See v. Humboldt, I., 84; Bontier and Le Verrier, 139.



explicit religious instruction is given to girls. Even before the time and teaching of Mohammed, the Arab women were treated as chattels; the nomads of Asyr sold



FIG. 399.—Tagal women. (Philippines.)

their maiden daughters to the highest bidder in the public market place. The wife could be lent for a night to her husband's guest, but the young girls were exempt from this custom. In the days of the Prophet, there were still temporary or *Móta* marriages, for a handful of dates or a sack of cornmeal. Sachau saw men strike



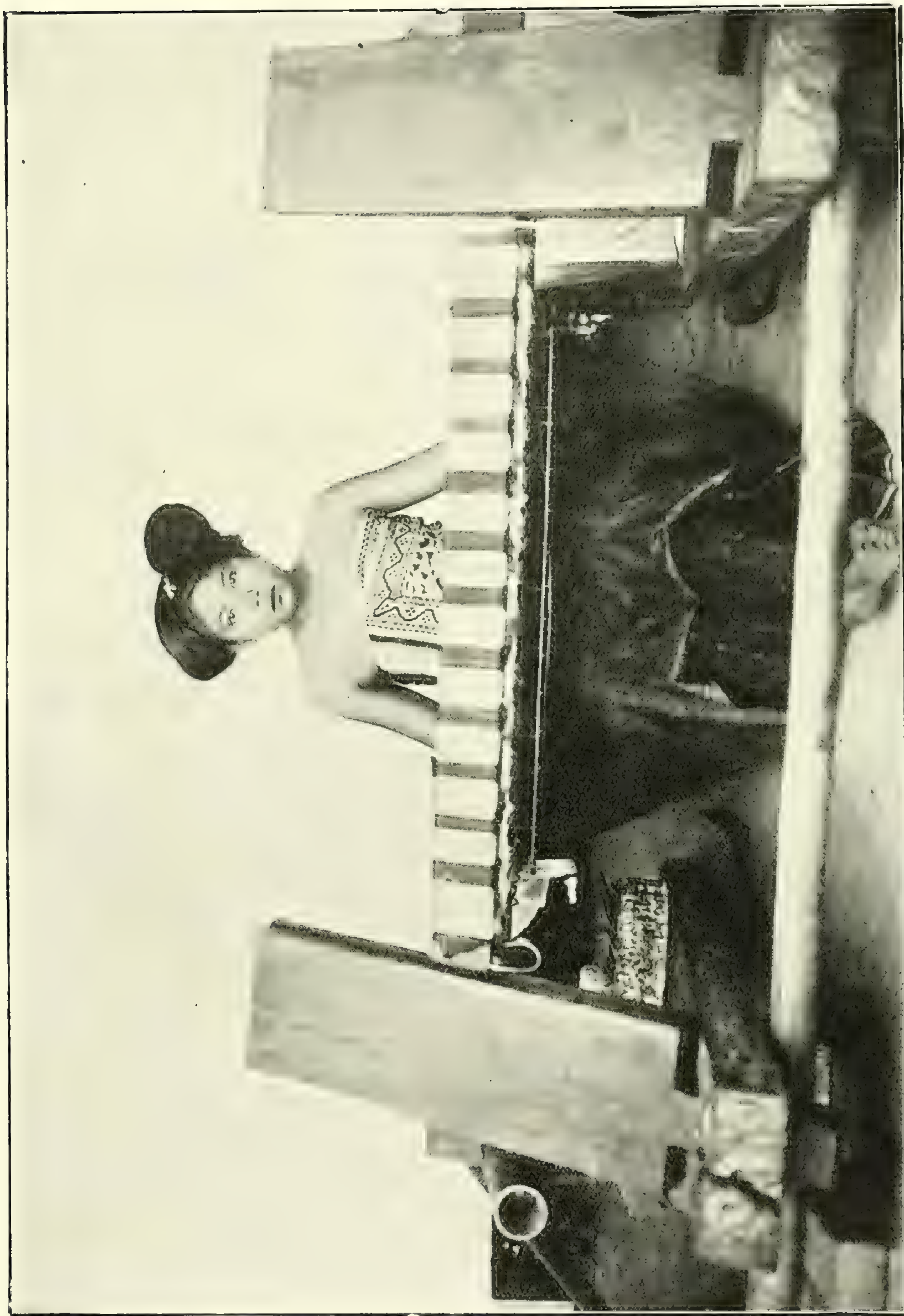


FIG. 400.—Balinese lady of rank weaving. (Photo, A. Maass.)

their wives on several occasions during his sojourn among the Bedouins, although this proves little, and is not unknown in Europe. The Bedouin girls are still bought by their wooers from their fathers, and it is a point of honour for a bridegroom to pay many camels and horses, won as booty in *Ghazas* or contests. Polygamy is



permitted ; but it is only possible to the wealthier men, and all these women have to share his dwelling with mere mats of straw between their cubicles, except in the case of great sheikhs who can afford a tent for each wife. These tents stand on the right side of the man's.

When they are on the march, the sheikh's wife rides in comparative comfort on a saddled camel with her children. The poor man's wife trudges on foot, carrying pots, pans and mattresses with her child perched on top of them, behind the camel on which her husband is riding.

Sachau gives an account of the Shammar Bedouins who live East of Arabia in the valley between the Tigris and Euphrates. The women are literally hewers of wood and drawers of water.

There is a curious symbolic custom among them (which may be a legacy from other more archaic conditions). Certain tribes choose their most valuable camel and place a highly-



FIG. 401.—Orang-Semang (Malacca). (Coll., Cerrutti.)

decorated litter on its back for the comeliest of their maidens. The litter is termed "*Dulla*" or "*Merkab*," and girl and mount are the Palladium of the tribe in battle. The girl sings war songs and fires the men of her tribe to deeds of prowess and courage. If she is captured in battle, it is, according to Geyer, considered a terrible disgrace to her tribe and they lose all right to another similar human palladium.

The Afghans were still very primitive before Western civilisation was known among them, and Elphinstone relates that their girls are rated at a definite tariff which, in his time, was 60 rupees a head. They are also used for the direct payment of debts and fines in kind. Twelve maidens are paid over for a case of manslaughter, six for the loss or mutilation of a hand or a facial mutilation, and three for the loss of a tooth.

Among certain Himalayan peoples, polyandry is customary, and we shall discuss this later. Drew was unable to find out anything definite about the adult sex ratio in Ladakh ; but he did not notice many older unmarried women, and the





FIG. 402.—Women working before their tent in the Biskra oasis.

Buddhist nuns seemed as numerous as the monks. He is of the opinion that polyandry leads to fewer female births, an observation which does not agree with that



made by Sir A. Cunningham. The Ladakhi women are extremely free and fortunate compared with those of the Indian plains. They go about unveiled, and according to Ganzenmüller, do their share of the field work side by side with the men.

Marshall gives a favourable account of the position of women among the Todas of Southern India. They have considerable freedom of movement, and are treated with consideration by the men.

The female births in the Nicobar Islands are said to be conspicuously rarer than the male. According to Vogel the women enjoy the advantage of being in the minority, and they have the recognised right to refuse unwelcome suitors. They bring dowries to their husbands; pigs, coconuts and pandanus trees. Moreover,



FIG. 403.—A visit in Japan. (Anthrop. Ges., Berlin.)

they do not leave their old home, but receive their husbands in the hut of their parents. They have the same freedom of movement as men, and are devoted mothers. The pregnant woman is accorded special honour in the Nicobar Islands; she is excused from field-work, and her husband shares this holiday. She is a welcome guest wherever she goes, and is often requested to plant seed in the gardens of her friends and hosts, as her condition is credited with magic powers of enhancing the growth of all living things. Marital infidelity is rare, but marriages are often dissolved because of incompatibility. If a second marriage takes place, the children of the first are sent to relations.

Among the Kara-Kirghiz of Central Asia, women are more respected than among the town-dwelling Turks. The Usbeg used only to practise polygamy when very wealthy; it was rarer in Khiva than in Bokhara and Khokand. Vámbéry reported that the Usbeg treated their wives better than either Tajiks or Sarts.



Among the Votiaks, a primitive people of Finno-Ugrian stock, there is promiscuity between the young unmarried people, and children born outside marriage are under no disgrace. After marriage, according to Buch, the wives are treated as property and may be lent to guests of special importance, and the bride is bought at a price from her parents.

Georgi described the loan of wives and daughters to guests as a form of hospitality prevalent among Koryaks, Chukchee and other aboriginal Siberian tribes. Middendorf confirmed the custom among Tungus and Samoyed. The Chukchee betroth couples as children; and the household is set up when the young husband is sufficiently skilled in the chase to provide food.

The Kalmuck have the best reputation for treatment of women among the Mongolian tribes. The girls are given a dowry, which ensures them a certain consideration, for example, 30 camels, 50 horses, 400 sheep; and this dowry is a "settlement," and remains the woman's property if she becomes a widow. Arbitrary repudiation of a wife is thus made difficult and unprofitable. Polygamy, however, is known, and the women must work very hard, although the men help them in pitching tents, etc. Insults to both men and women are severely punished, but wives are occasionally lent. Pallas described child betrothals among these people which were considered binding, but not consummated till puberty.

Among the Tungus it was not customary for the men to help the women at work; and they used separate entrances to the *yurt* or tent, the man on the right side and the woman on the left.

Among the Samoyed the women are influenced by primitive superstitions and prohibitions, perhaps arising from the wonder and terror about menstruation. Hiekisch says that the Samoyed hunter must avoid contact with weapons or tools touched by the women; and Pallas gave a detailed account of the fumigations of the sleds, clothes and household goods when the huts were set up; and noted the fact that the women had to unfasten the loads bound on to the sleds *from below*, creeping between the sled poles under the reindeers' bellies. When on the march the women might not pass between one sled and another, but had to go all the way round or crawl between the poles. There were elaborate rules whereby certain portions of the tents were closed; and no woman or girl after puberty was permitted to eat reindeer flesh or to share meals with the men. Pallas distinctly compared



FIG. 404.—Moslem women at their toilet. From a MS. (Bayr. Landesbib., München, cod. orient. mixt. p. 5) of the seventeenth century.



Samoyed and Ostiak to the disadvantage of the former, although their customs were very similar.

The Li-si people of the Island of Hainan in the Gulf of Tonkin, between China and Annam, give their women "supremacy" according to Wolter. They look after agriculture or rather tillage while the men hunt animal food.

In the ancient kingdom of Korea women were considered either as labour material or mere instruments of pleasure. They have no equality in any respect, and, as a French missionary aptly said, their individuality is not morally recognised. This denial of personality goes so far that the Korean woman has no name of her own. As a child, she has a nickname or pet-name in her home circle, but for those



FIG. 405.—Persian ladies greeting each other. From a MS. (Bayr. Landesbib., München, cod. pers. 10) of Firdousi, seventeenth century.

outside she is just so and so's daughter or sister. After marriage, even this is obliterated and she is generally known by the name of her birthplace or native district. The women of the lower ranks do all the field work and toil incessantly. The high-born and wealthy man's wife is a prisoner in her husband's house, for she may not look down on the street without asking and receiving his permission to do so. Jealousy is common, and it often leads to murder and suicide. If a Korean man has to mend the roof of his house, he is under an honourable obligation to warn his neighbours, who hasten to shroud their women's windows and double bar their doors.

When travellers pass along the roads, they hardly ever see a peasant woman, and if they meet one, she turns her back to hide her face. Near the towns, according to Petermann, the slave-girls showed their faces, but their heads and shoulders were draped in heavy cloaks. There is, however, an elaborate code of politeness towards



women, and men make way for them in public, while the private apartments of the wife and mother are sacred, and may not even be invaded by officers of the law.

Marriage is the basis of the social structure, and only married men may hold responsible office in the State. The marriages are arranged by the parents, and the married woman has a special coiffure, twisted in great loops ; her hair is dressed specially by a girl friend on the eve before her wedding, and the bridegroom also alters the style of hair dressing, to show his responsibilities on the most important occasion of his life.

The bride must remain silent throughout her wedding day ; she must not even reply to any compliments and congratulations. Married women wear two rings on the third finger to show their estate as well as their distinctive way of dressing the hair. If a marriage lasts 60 years, the golden anniversary is celebrated with great ceremony. There is only one legal wife, but concubines are often kept. Strict fidelity is exacted from the wife only. Boys and girls of noble birth are separated early, and their lives are mainly apart. The Korean nobleman who has just married is expected to spend three or four days with his bride and then return to his concubine for a while ; the rationalised explanation is “ so that she may not think he cares for her too much ! ” The divorced wife in Korea has the privilege of preventing her husband remarrying in her lifetime, but he may have as many concubines as he can keep.

The status of the Javanese women is thus summarised by Captain Schulze :

“ They are not allowed to enter the mosques unless they have studied for the priesthood, which is seldom the case, so the women of the upper class perform their devotions at home. The girls and women of the people might be heathen were it not for their ritual mutilations and abject social position—the gifts of Islam. The Moslem Javanese is absolute lord of his wife : he may beat her, kick her and drive her out of the house with impunity. The women of greater means and leisure often achieve a considerable degree of freedom after observing outward forms of faith. . . . In the towns, the western influence and examples often lead the daughters of the people to abandon the tents of Islam and to earn their own livelihood and exercise their own judgment.”



## CHAPTER III

### SOCIAL STATUS OF WOMAN IN THE ANCIENT CIVILISATIONS

#### 1. IN THE ASIATIC CIVILISATIONS

[WE do not know very much of the status and life of women in the early Asiatic civilisations. From the excavations at Ur it is clear that an advanced civilisation was prevailing in very early times ; and the tombs of King A-bar-gi and Queen Shud-ad proved that a developed state of urban authority was flourishing. Human sacrifice appears to have been practised at the death of royal personages ; and the temple and palace reconstructions suggest that concubinage was established.

Sumerian society was also highly developed, and here it is possible to see more clearly. The codes of Urakagina and Dungi, King of Ur, suggest a complicated legal system in which we can piece together the position women may have occupied. The older Sumerian enactments differed from the later code of Hammurabi. The family was less important, and the various grades into which society was divided made it impossible to generalise as to the condition of women. Woolley states that, for example, the penalty for causing abortion through a blow was 10 shekels if the victim was the daughter of a nobleman ; whereas it was five in the case of a burgher's daughter. Monogamy seems to have been the general rule, but, as in contemporary Europe, concubinage was common. The wife enjoyed considerable freedom and her legal position was fully recognised. In certain respects she occupied a position inferior to her husband. Divorce was easy for him, but more difficult for her, and the question of sterility was of great importance. Woolley has described the various laws of interest to women and has pointed out that the system of adoption may have some reference to the practice of temple prostitution.]

As has been said, at the time of Hammurabi (c. 2000 B.C.) there were certain changes. Winckler points out, for example, that the slave wife was only allowed, as a rule, if the chief wife was childless. He quotes the following business contract (by this time the husband's name has precedence and the girl's mother is not mentioned) :

“ Shamash-nur, the daughter of Ibi-shan, from Ibi-shan her father, have Bunene-abi and Belishunn bought, as wife for Bunene-abi, as maid for Belishunn. If Shamash-nur to Belishunn her mistress, says, ‘ Thou art not my mistress,’ her hair shall be shorn and she shall be sold.”

B. Meissner<sup>3</sup> concludes from the study of Hammurabi's code that, under it, the Babylonian wife had a position of considerable responsibility and freedom, but was not equal to her husband. She could, however, bear witness before the law, carry on trade independently and own property which her husband's creditors might not seize. She had many privileges, also, in respect of her children. If her husband neglected or offended her without cause, she could leave his roof, taking her dower money with her.

[In cases of adultery which were amply proved drowning was the prescribed penalty, but even then the husband, if so disposed and by petition, could save his wife.



Generally speaking, the position of woman during the age of Hammurabi was high and her status as wife amply secured.

The ancient Assyrian laws differ in a marked degree from those of Babylonia, even though, as Mr. Sidney Smith has pointed out, Hammurabi's code was being studied in Assyria at the time the Assyrian laws were being compiled. A considerable part of the extant material is concerned with women, and to the various editions of the laws we would refer those readers who desire additional information (see S. Smith, p. 394).]

The status of women in India changed in the course of ages, in consonance with the cultural conditions of their country. For the pre-Vedic ages, knowledge is lacking, but in the Vedic era she was the man's comrade ; may have stood side by side with him in battle, and sacrificed with him. During the religious and social changes inaugurated by the Brahmins, the Hindu woman was only permitted to be the mother of her children, and under all subsequent transcendental speculations she was the more deeply enslaved to a religious ritual.

[The Laws of Manu insist on the naturally wicked nature of woman and they reveal her disabilities in a clear light. "It is the nature of women to seduce men," we read, and "for that reason the wise are never unguarded."

In the days before Buddhism the status of woman was certainly not a high one. Daughters were not desired and wives were not the equals of their husbands. Horner is of the opinion that a change became apparent during the Buddhist epoch and what she calls the "exclusive supremacy of man" began to give way. According to this authority woman under Buddhism was an individual in command of her own life. She had become an integral part of society. (For further details see Bader, Nève, Schreiber, J. Mayer, Winternitz, Horner, etc.)]

Schmidt,<sup>8</sup> in his great monograph on the sexual customs of ancient India, points out that marriage was the only sacrament to which women were admitted by Brahminism and that the Indian lawgivers who devised the system were so jealously suspicious that they decided that independence did not become a woman. As a child, her father protected her, as a young wife, her husband, and, in riper years, her son.

It was a sacred duty of the father to give his daughter in marriage as soon as possible. Polygamy was permitted and also concubinage with women of lower caste. If a wife was childless, in some cases she was permitted, with her husband's consent, to have connection with his brother or near male relative during his lifetime so that a male child of his blood might be engendered.

Among the vast majority of Hindus to-day, the home is the centre of existence, but especially among the higher castes it is guarded jealously, and the father exercises therein an almost unlimited authority. The wife's duties are both intricate and laborious, and in practice the most prized of her virtues is strict economy ; the struggle for livelihood is merciless and the Hindu hates what seems to him needless extravagance. There are many Hindu wives who fulfil the traditional ideal of devoted self-abnegation, humility and chastity. They possess natural intelligence and a good memory, but these abilities receive hardly any cultivation, in spite of the fact that the education of the daughters is entirely in their hands. Without the permission of the husband or father, Hindu women are not supposed to leave their houses or even enter the outer apartments which custom relegates to the men of the family. It is considered unseemly for the women to eat in the presence of men, so they wait till the men have had their meals. There is also the traditional tyranny of the older women of the household, especially the mothers-in-law over the younger,



either daughters or daughters-in-law who must remain veiled and silent before them unless specially addressed.

Much time is taken up by the constant ceremonial but necessary ablutions ; they must wash themselves and their children thrice a day. Very few can read, but many solace themselves with telling or hearing tales of an extravagantly fantastic kind, or they embroider very skilfully, or play games. The thoughts of the girl are deliberately directed towards marriage from her tenderest years, and they pray for tender and loving husbands.

[In modern times the condition of Indian women is changing. Although the status of the vast majority of the peasants remains the same, the more educated women are taking considerable part in national politics. Missionary and industrial factors are bringing Western customs to India as elsewhere ; and the question of child marriages is awakening opinion of the desirability of reform. Mrs. Das, a white woman married to a Hindu, has recently published some interesting material on the condition of woman in India, whilst Kelman has dealt with female conditions in modern industry.

She points out that the entrance of women into the factories is of recent date and is still on a very small scale. Moreover, the changing political situation will affect the position and status of the factory worker in India as elsewhere.

The question of child marriage and the age of consent in India \* has of late years been investigated more fully than before. The publication of the somewhat sensational books † of Mayo, together with the replies thereto by Iyer, Chapman and Field, stirred the popular imagination and awakened interest in a department of female life in India which is assuming much importance, both from the political and religious points of view.]

In the traditional civilisation of China, Confucius dealt with certain rules for domestic ethics and manners, ordaining that man and woman should inhabit different parts of the house and keep to a strict division of labour, the husband should never discuss domestic, nor the woman public matters. When husband and wife converse together, they each bow as they answer each other. Such suggestions regarding separate quarters and occupations could only be carried out by the wealthy. The poorer classes must have shared each other's burdens and anxieties from time immemorial. Confucius established or crystallised in his code a very strict dependence for women ; they cannot dispose either of their persons or of any property. Girls must be married at 20 years of age and marriage is a family contract, arranged through accredited intermediaries. There are certain prohibited degrees ; and rules of exogamy attaching to certain family names are well known (see Medhurst). If a wife remains childless, a second may be taken, but remains in a subordinate position to the first ; the children of the second union must call the first wife " mother " and show her all honour. The children may lawfully inherit and are thus able to carry on the ancestor worship on which Chinese ethics have been founded.

H. A. Giles <sup>4</sup> <sup>5</sup> gives a detailed account of the life of women in traditional Chinese homes and in modern times. He emphasises the social life of the women among themselves, their skill in household arts and the fact that most of the girls in the more prosperous and leisured households are taught to read. Gray emphasises the feeling of dependence which surrounds the girl's childhood, the loneliness and

\* [Full information on the important question of the age of consent in India was published in the *Report and Evidence of the Committee* which was published in 1929.]

† Cf. Margaret Noble's view with Mayo's interpretation of Indian morality.



oppression of the young wife whose mother-in-law had almost unlimited authority over her.

Cooper states that the Chinese women could not bear witness before the law and that fathers were permitted to sell their girl children for household slavery or prostitution and often did so in the poorer classes, and husbands may also sell their wives, according to Cooper, though this is very seldom done and is considered dishonourable. Concubines share the roof with the official wife and their sons inherit and, as a rule, equally.

In Japan the women have a greater share in social and æsthetic life than in China (*cf.* Bacon). Among the nobility and wealthy classes they are still somewhat strictly secluded.\*

## 2. THE SOCIAL POSITION IN ANCIENT EGYPT

There are in existence several inscriptions and papyri of the Ptolemaic era, and earlier, on which contracts, protocols and notes of lawsuits have been made both in



FIG. 406.—Seated figures of a man and his wives. (Ägypt. Mus., Berlin.)

Greek and Egyptian characters. We have thus been able to collect a good deal of documented information about the life of the people and the position of women in the millennium before the Christian era, and at previous epochs.

Already in the tombs which belong to the relatives and the highest officials of the ancient kings who had pyramids set up to themselves as memorials, the wife is called mistress of the house, the children are named not only after the father, but

\* The ancient courtly culture of Japan is brought graphically before us in the long novel, "The Tale of the Genji" by the Lady Murasaki (twelfth century). *Cf.* also G. Mere, Reitzenstein.<sup>20</sup>



also after the mother. In some cases the mother's name only is mentioned. Already among the pyramid builders princesses might become heads of the state, either regents or queens-regnant and receive the full divine honours accorded to the male sovereigns. The Egyptian women appear to have followed the example of the queens and to have taken full part in public ceremonies and social life.

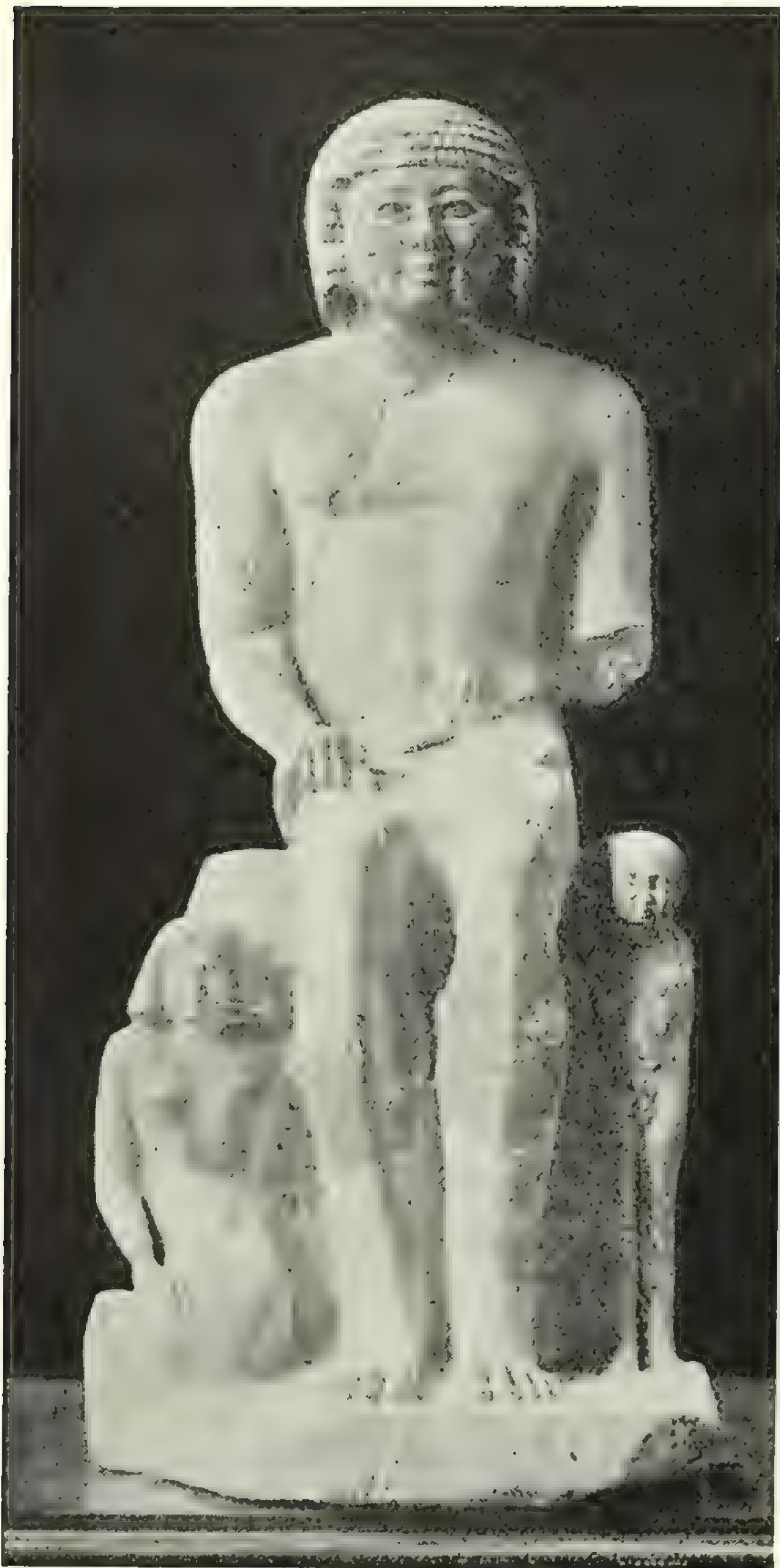


FIG. 407.—Egyptian family group.  
(Ägypt. Mus., Berlin.)

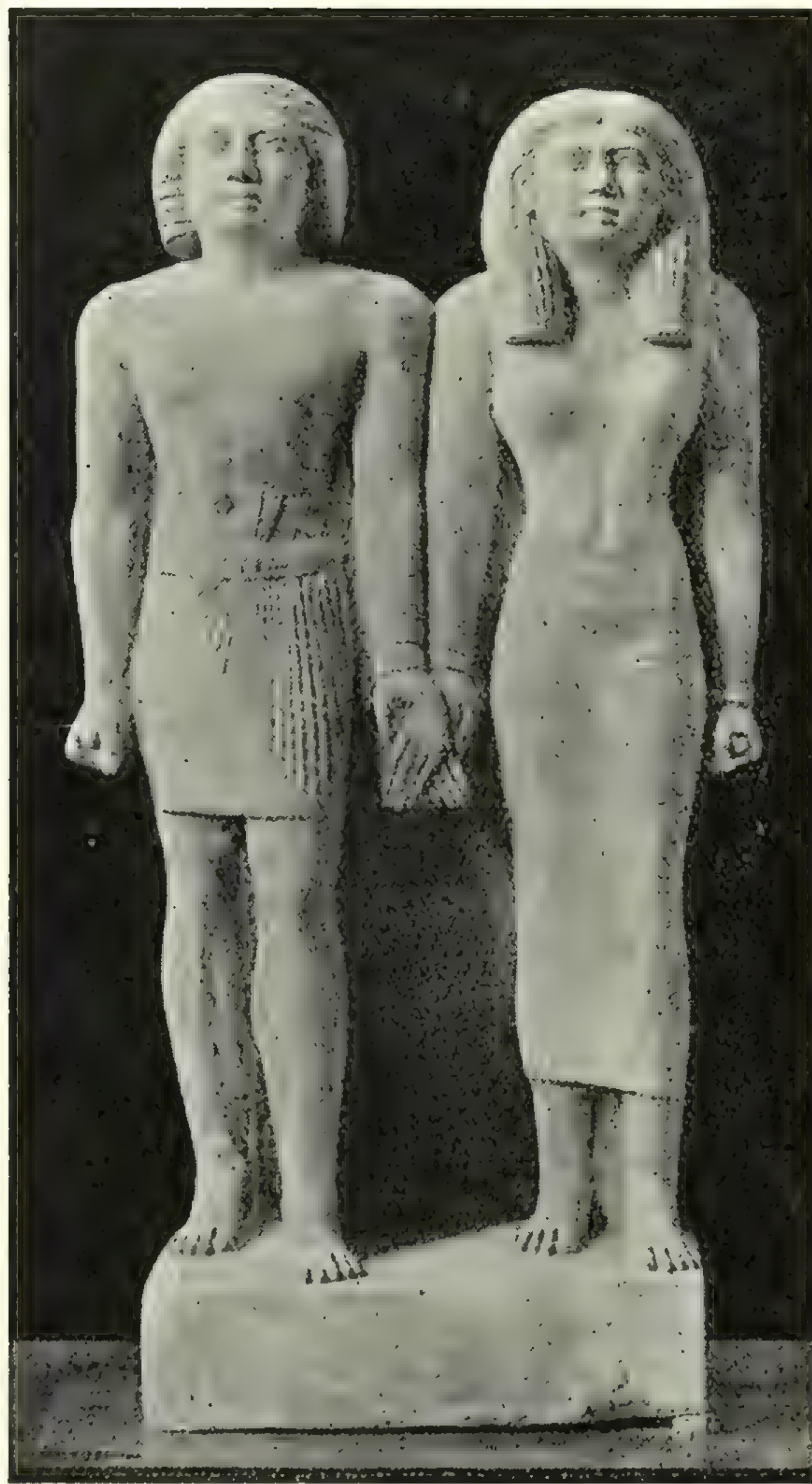


FIG. 408.—Egyptian married pair.  
(Ägypt. Mus., Berlin.)

We have in ancient Egypt \* several forms of marriage in which women play various rôles.

Some comprised simple intimate love-relations, even including the less rigid form of marriage. The wife or female partner received a certain sum of money and had her choice of living with the man in his household, and her eldest son was

\* [Written contracts are common in the Ptolemaic period but are very scarce in earlier times. There is good evidence that brother-sister marriage was well-known even in the later periods, but detailed information on marriage in ancient Egypt is lacking (see Nietzold.).]



entitled to inherit from the father. In this case she could, it seems, be formally and finally repudiated.

In another form the wife became the official partner with a share in all the man's property and equal rights. These alliances were concluded in contractual form and the woman could not be repudiated arbitrarily, though a divorce could take place ; but divorce meant the return of the woman's dowry or its equivalent out of the man's total property.

In another form, the *Nebt-pa*, or lady of the house, obtained formal possession of the house and control of the household arrangements. In certain cases, the man appears to have made over his property to her and only stipulated that she should provide him with good treatment and keep. In a sculpture preserved in the Munich Museum, the woman is represented seated on the right and her form is coloured red, which is generally a peculiarity of male figures. The *Nebt-pa* wife was entitled to leave her husband. It is probable that this variation originated with the custom of inheritance through the daughter.

Most of the demotic marriage contracts which have come down to us were found in the ruins of Thebes. Many of these arrangements stipulate for the payment by the man of a dowry to the wife and also a yearly allowance. And the husband often undertakes not to bring any strange woman into the household and to pay a considerable fine if he should, nevertheless, fail to keep his promise.

The monuments of married pairs represent the husband and wife standing or seated side by side ; they walk forward hand in hand, or the wife puts her arm round his body, or rests her hand on his shoulder. Such equal and dignified partnership could never have been represented had it not been approved or sometimes realised. Nor are these interesting monuments the product of a relatively short or superficial phase in history.

[Generally speaking, the law gave the fullest freedom to women. As mother her power was great, and the love poetry of the Egyptians suggest that intimate relationships were common. Doubtless among the lower classes the life of women was hard, but the climate and the civilisation which prevailed made their lot more easy than among primitive tribes living under wild and savage conditions. As among the early Egyptians marriages between brothers and sisters continued to the time of the Ptolemies. (See Nietzhold ; Erman, *Ägypten* ; Revillout ; and for women in ancient art see Ahrem.)]

### 3. THE STATUS OF WOMEN IN ANCIENT ISRAEL

The Hebrew code of law and custom attached supreme importance to preserving and increasing their racial stock. Polygamy was allowed by the Mosaic Law, but not to the priests. Monogamy seems, however, to have been the rule. The Old Testament contains interesting examples of women who exercised considerable influence.

Hygienic rules were observed, and a certain standard of health demanded in marriage ; unions between near relatives were forbidden. The Talmudists added several fresh prohibited degrees to those decreed by Moses. Marriage with idol worshippers and strangers was prohibited. Great emphasis was laid on the maidenhood of the bride, and a girl who was found not to be faithful during betrothal was stoned (*cf.* Deut. xxii. 23, 24).

The young girl, in certain cases, could be given in marriage before puberty (12) even against her will, but a later adjustment might be made.



The father's consent to a marriage was gained by money or service (*cf.* Moses and Jacob). The Talmudists decreed certain nuptial formalities—the payment of at least one perutah and a written acknowledgement from the son-in-law, or, alternatively, the immediate consummation of the marriage in the presence of two witnesses to whom the man clearly and loudly stated that he accepted the responsibilities of a husband. But this primitive method was subsequently abolished. In any case there was careful pre-marital discussion of the mutual duties and privileges, and full explanation.

The Talmudists hesitated to allow any great range of choice in marriage, and the young couple were chosen for one another and often had not previously met.

Excessive sexual intercourse in marriage was not approved by the Talmudists, and there were definite ritual prohibitions at certain times, but, on the other hand, the husband was reminded that sexual intercourse was due from him to his wife as well as from her to him.

The women were generally secluded from public life and had little share in the studies of men and but little social life. Respect and a certain consideration were shown her, but her chief part was to bear numerous children and care for the household. If the man failed on account of poverty, or for other reasons, to provide her with suitable clothing and ornaments, household money and pocket-money, he could be brought into court and she could obtain a divorce. On the other hand, she was expected to perform all the household work herself unless she had brought slave girls as part of her dowry. (For further detailed information see Duschak, Weill, Lichtschein.)

#### 4. SOCIAL STATUS OF WOMAN IN CLASSICAL ANTIQUITY IN GREECE

There is substance and justice in the reproach often addressed to the people of ancient Greece: that they gave an inadequate status to their women, at least, in the ages of their greatest political and intellectual achievement. In earlier (*e.g.*, Homeric) ages, women, although very low in position, were more respected, for, as Decker has pointed out, not only personal beauty but wisdom and skill in female occupations were appreciated as qualities for which wives were beloved and honoured. And Achilles ("Iliad," IX., 341) speaks these words:

"Every man whose heart beats truly and with good will  
Honours his wife and tends her carefully."

In Athens things were, however, very different. The young maidens were secluded in the women's part of the house; they sat at their mother's feet and spun and wove. The wife was a mere child when she entered her husband's home; she bore children but had not even a free hand in household management, nor any educative *rôle* where her sons were concerned. She might not leave the house without express permission except to take part in the great public religious festivals. It was not surprising that a being so undeveloped failed to inspire either human interest or passion. Imagination and desire were thus sharply separated from the family and the home with disastrous results. The other Greek states seemed to show an improvement on Attica in this respect. For example, the Æolians and Dorians gave their women much freedom of movement, a large share in public ritual and education, especially physical culture, and a voice in public affairs. In Sparta these tendencies were crystallised in the Code of Lycurgus. Elsewhere,



both on the Islands and in the Greek Colonies throughout the Mediterranean, the results were much more favourable, intellectually and æsthetically. The Æolian women had an active share in the history of their race and especially in poetry\* and philosophy.

When Greek trading enterprise brought much material wealth to the towns, and acquainted the Greeks of the mainland with the habits of Asia, the subordinate position and inadequate personality of Greek wives led to the favoured position of the hetæra and the ordinary prostitute. The rich citizens of the Greek towns summoned slave girls, skilled in music, song, acting, and the dance, to their symposia, and there grew an active and persistent demand for wit and grace and skill in conversation and interpretative art as well as for beauty of body in these women, who had none of the restrictions of the legal wife. Solon† recognised their public position by the imposition of a tax with the proceeds of which a temple was constructed. The hetærae were either slaves who had been freed or adventurers from the Asiatic colonies, who were all distinguished by some special attractions or talents of body or mind; they were mistresses of the arts of dance and song as the Greeks understood those accomplishments, as also of dress and conversation. They became the intimate associates and the fashionable hostesses of the leaders of the people, of artists, of statesmen and of philosophers.

Thus Pericles was for years on the most intimate terms with Aspasia, whose high order of intelligence was expressly mentioned by all contemporary writers. In Plato's "Menexenus" it is reported by Socrates that Aspasia had composed a funeral oration. She came from Miletus and was taught the arts of pleasing by Thargalia herself, a celebrated hetæra of that town. The habits and example of Alcibiades lacked the dignity and intellectual companionship of Pericles and Aspasia, but he seems to have inspired devotion in his mistresses, Timandra and Theodota. The mother of the general Timoleon became the mistress of Conon. Hyperides supported the beautiful Phryne, and also another woman in Piræus and yet a third in Eleusis, in case he should have occasion to visit those towns. Among the various schools of philosophy the Epicureans and Cyrenaics explicitly accepted the hetæra in theory as well as practice; and such men as Plato, Socrates and Aristotle saw no shame in it. Among the associates of Greek philosophers were Danaë, the beloved of Epicurus, who practised promiscuity with his disciples; Nicarete was associated with Stilpo; Mania with Antenor.

Art was even more closely interwoven with the hetærae than philosophy. Phryne, rising from the waves at the festival of Poseidon before the gaze of the assembled Greeks, was chosen as model by Apelles for his picture of Aphrodite Anadyomene, and she inspired the sculptor Praxiteles who immortalised her in a statue which was set up in Thespiæ beside that of the goddess herself. In the pride of her personal triumph she set her own golden image by the side of the warrior Philip of Macedon. The great dramatist, Sophocles, had two long associations with hetærae: Theoris and Archippe, but left all his fortune to the latter. The Attic comic dramatists chose the lives of hetærae by preference for their subjects; it is said that among the women thus distinguished were Anteia, Isostasion, Corinna, Clepsydra, Phonion and Thalatta. Thais was an expert in philosophical subtleties and Lasthenia was a pupil of Plato. And there were orators and writers among them. Leontium acquired a reputation for fine diction and grace of style in her controversy with Theophrastos; Lamia and Mania, and especially, an aunt and

\* Cf. the poetess Sappho, and see Poestion.<sup>1, 3</sup>

† [Athen. XIII., 569.]



niece of the same profession—Gnathæna and Gnathanion—were famous for their sense of humour and a wit that was often extremely cynical and gross.

In Corinth the hetæræ were associated with a ritual atmosphere and significance. When the citizens of Corinth implored the favour of Aphrodite they were wont to dedicate several of their prettiest slave girls to her temple service. Altars were raised to Lamia in Thebes and Athens, and in the latter city to Leaena, who, it is said, bit out her tongue rather than betray a plot in which her lover was implicated.

In the later ages of Greece schools for hetæræ are mentioned, and in the Oration, attributed to Demosthenes, against Neaera, we learn that women who were not hetæræ visited these schools.

[The existence of the hetæræ in ancient Greece was the natural result of the cloistered life demanded of the married women. The ideas of the ancient Greeks on this subject, just as on the question of homosexual love, differed from those of modern Europe, and no understanding of the older civilisation can be obtained if it be judged by standards far removed from it in time. There can be little doubt that women of the type of Aspasia played a prominent part in both political and cultural development; and it is clear that many of these women realised that the condition in which the wives of their lovers lived was not conducive to a stable society. It is not true to say that the ancient world suffered decay through the influence of the hetæræ. Such an idea is not based upon a correct understanding of the factors underlying the decay of civilisations.]

For further information see F. C. W. Jacobs, *Becq de Fouquières*, who discusses the position of Aspasia; Bader,<sup>2</sup> Mähly and Notor, who deal generally with Grecian women; Montifaud, who describes the courtesans of antiquity; and James Donaldson, who gives a general account of the position of women in Greece and Rome.]

## 5. SOCIAL STATUS OF WOMAN IN ANCIENT ROME

Roman women enjoyed a better status than those of Greece. They were permitted to walk abroad in public, and a special festival, the Matronalia, was celebrated in their honour. Romulus decreed that they should be exempt from all household toil excepting spinning and weaving and making garments and household furnishing. Injuries done to matrons and maidens through word or deed were punished, in the gravest cases by death. If a wife were divorced for any lesser cause than adultery or poisoning the husband was compelled to give her half his property.

In the year 195 B.C., after the last Punic war, it was proposed to restore the sumptuary privileges of which women had been deprived during the hunger and difficulties of that great struggle. The Roman women assembled in the Forum and the Tribunes decided to restore their privileges. On this occasion the Consul, Porcius Cato, is said to have declared of Rome:

“All men rule their wives, we rule all men, and we are ruled by our wives.”

In early republican Rome girls were considered marriageable between their 12th and 13th years. Perhaps they were betrothed earlier. In theory their consent was necessary, but in practice this was not so, for they were too young to decide. It was a matter of convenience between two families, and love and personal inclination remained in the background. Betrothal, moreover, did not bring the couple nearer together. Originally there was a religious ritual with joint sacrifices and the eating of a special cake by the bridal couple. Later in Roman history



a mere legal contract replaced this ritual, but there was still a festive meal and ceremonial rejoicings:

The married woman received the keys of her husband's house, and had to return them in case of divorce. The mistress of the household was addressed as *domina* and accompanied her husband to the public games or as a guest in friends' houses.

Under the Empire, women obtained the right to hold property absolutely and independently of their husbands. Very wealthy women had their own land agents or *procuratores* who were responsible to them only. Some women were highly educated, with various interests, which included an acquaintance with the Greek language and with music. Ovid remarked that even ignorant girls wished to appear clever, and Greek was used occasionally in society. One remarkable characteristic of the time of Scipio was a circle of highly cultured women who formed the kernel of Roman high life. In place of the old domestic morality and religious beliefs and superstitions of earlier times there emerged the freer world of emancipated womanhood. It was in this congenial atmosphere that the erotic poetry of Rome was inspired and written. The women of Rome also began to interest themselves in politics. They took part in deliberations and shared in party intrigues. Frequently, also, women, like Fulvia, wished to obtain supremacy through dominating those in power instead of becoming engrossed with household duties. Under such conditions divorce became more and more frequent. The times presented a picture of moral decay and the most noble families were not exempt. The meeting-places of the fashionable world were baths, like those at Baiae and Puteoli, where the fetters of convention were thrown off and dancing, games and revelry took place. Morality decayed to a degree that has not been seen since: the emancipation of women of the higher circles was complete, and the sole aim of life was the pursuit of pleasure.

In later times women's interests outside the house were almost unlimited, for circus, theatre and amphitheatre stood open to her. The result was the disruption of family life, and divorces, which were easily obtained, became the order of the day. Prostitution flourished and the decline of female virtue became everywhere apparent.



## CHAPTER IV

### INFLUENCE OF RELIGION ON THE SOCIAL STATUS OF WOMAN

#### 1. WOMAN UNDER ISLAM

WE have already briefly sketched the position of the women of Arabia in the period immediately before Mahommed. Hauri describes the life of a wife in Medina as absolute slavery. She was one of a harem of from seven to 10 members, and wholly excluded from any share in inheritance ; she herself was but a chattel that frequently passed into the possession of her stepsons. Under Islam such an arrangement was stigmatised as abhorrent. It was also quite usual for a man to take two sisters together to wife. There were also Mota marriages, which were wholly temporary and casual. The wives of the poor were frequently seized or bought by the rich, and many tribes offered wife or daughter to their guests for a night as a matter of course.

Mohammed reformed and improved this system not only in his moral axioms but in his legislation.\* He appears to have limited the number of lawful wives to a maximum of four, and no man might marry a woman he could not support on a certain level of comfort and decorum. Nor might the husband of many wives exclude one or more from his company, but had to spend the night with them in equal rotation.

A woman was betrothed early, but having reached marriageable age, might not be forced into a marriage she disliked. A dowry was settled on the wife at marriage and this was her property and might not be taken from her. In case of divorce it had to be retained by her. A wife could not be inherited but had herself a definite share in inheritance. The prohibited degrees of kinship for men are mainly female relatives in the direct line. Sororal polygamy was forbidden, and no man might marry any girl whose mother had been sexually intimate with him.

A conspicuous feature of life under Islam is the ease with which divorce and repudiation may be obtained.

The veiling of women from all but their husbands and nearest male relatives is also characteristic. The slave woman was also not veiled in her master's presence. (The relevant texts of the Koran are Suras 24 and 33.) This naturally tends to exclude women from any wider social or mental life. There is no doubt that, though he wished to counteract the indiscriminate licence of Arabia in his time, the Prophet's deepest motive was an intense jealousy and temperamental suspicion. The absolute command to veil women became compulsory through a later interpretation and has left its mark on the whole emotional life of Islam.

The Koran emphasised women's weakness, but we must also, in justice, remember that Islamic law has also defended certain important rights of women and improved their position as compared with the state of things obtaining previously in Arabia. Nevertheless, we must admit that Islam is, and remains, the extreme

\* [For the position of women under the law see Helou and Amîr 'Alî.]



representative of a patriarchal civilisation, and a wholly male outlook, and regards this world and the next from an androcentric point of view.

Many authors have pointed out that the conventional view that every Turk or Arab has a Harem at his disposal is not in accordance with fact. Both on account of finance and for the sake of peace the majority of men in countries which legalised polygamy have always had only one legal wife. The Koran permits polygamy, but it makes very definite demands on each wife's behalf on both purse and person of



FIG. 409.—The garden of a Harem, seventeenth century. (Mus. für. Völkerk., Berlin).

the husband ; and many qualified observers have maintained that polygamy and promiscuity, in practice, are more frequent in Europe than in Islam.

In Persia\* child betrothal is common and the etiquette of the veil is strictly observed.

There are two types of marriage : one lifelong, and the other a definite agreement for a specific time. The latter is termed *nikah-el-mönkese pas : Arnsi-sighei*, or “marriage according to prescription.” The children of both are legitimate and the concubine who bears a child acquires the rights of a wife. Among the majority of Persians, even in the towns, marriage is monogamous, and this is the rule among the wandering Nomads. The Nomad women do not veil their faces, but are very reserved in their manner to strangers.

The illustrations (409 and 410) show scenes from Harem life among the wealthy.† It is noteworthy that these Harem women always avoid eating food prepared by

\* [Cf. Kulsūm Nānī and C. Rice.]

† [Cf. Guer for an account of female life in the Turkish harems.]



the slaves of other women for fear of secret poisoning. A woman of rank is *hanoum* (feminine form of *khan*), and of lesser station *badgy*, or *begum*, while the poorest are *saife*. In spite of their seclusion Persian women have often exercised great influence in politics as wives or favourites of Viziers or governors. In a polygamous household the senior wife, especially if she be a kinswoman as well, exercises considerable authority over the others and even arranges the most intimate domestic matters.

In the district round Mecca, according to Snouck Hurgronje, a slave girl who has been her master's concubine cannot be sold to another if she has borne a son.



FIG. 410.—Persian lute-player. (Bayr. Landesbibl., München, cod. pers. 132.)

Under traditional Islam no provision was made for either the religious or the intellectual education of women. Instead of definite religious belief we find the grossest and most puerile superstition. Virchow<sup>7</sup> found poor health among the Egyptian women: anæmia and consumptive tendencies were common, due, probably, to their rigid seclusion and to the very restricted choice of diet. He found these conditions, with few exceptions, throughout Egypt and Nubia, and the Egyptian Christians, the Copts, actually secluded their women even more rigorously than the Moslems. Virchow visited Coptic ladies who were not allowed to leave their rooms to join their menfolk at meal times or to cross the street and take the air in a magnificent public park at their very doors, however well attended. Incidentally, the custom of the veil and seclusion of women was originally not Arabic, but Persian



and pre-Islamic, like the castration of male slaves, which was practised in the Byzantine Empire as in classical antiquity.

Narbeshuber, who studied the life of Islam among the Tunisians of the desert as a doctor, and whose wife learnt the language and became friends with various wives and daughters of well-to-do Arab townsmen, was of the opinion that they had become adapted to their environment. But he admitted that the Bedouin women of the nomad desert tribes had a very hard and restricted life of toil and but little consideration. Often she was beaten, and always treated by her lord as a servant. The accounts of other travellers and authorities concur in this.

## 2. THE SOCIAL STATUS OF WOMAN UNDER CHRISTIANITY

In classical antiquity both the home and the race suffered through the dominance of public over private interests and of the state over its individual citizens. All values became exteriorised and translated into terms of power and of those activities and qualities in which men excel. Women's interests and outlook were negligible in statesmanship. Thus there came a reaction, comparable to the revulsion of our own day, and an emphasis began to be laid on another set of values. This revaluation was not wholly due to Christianity, but it may have supplied the initial impetus. When once that impetus had been given, many different factors combined and interacted, and it may be maintained that, since the later Middle Ages, Christianity has steadily lost the paramount influence it once exercised on civic and personal ideals. But if we wish to be just and correct in our estimate here we must distinguish several great epochs in which Christianity passes through very diverse phases.

### (1) The Age of Jesus and His Apostles

The original and essential doctrine of Jesus of Nazareth was altruism : " Love thy neighbour as thyself." It was a sort of individual socialism on a simple economic basis and had nothing in common with organised religion, cults or dogmas. It is clear, from the episode of the woman taken in adultery and from the devotion and discipleship of Mary Magdalen, that Jesus had a far nobler and humaner view of woman than all those who subsequently called Him Lord. Apart from this general altruism there was no explicit doctrine of change in woman's position, and the Early Christian attitude was deflected and changed by various Oriental influences. The original doctrine of Jesus of Nazareth was indeed revolutionary ; but in the special sphere of which we treat it preserved more than it altered. Marriage was part of the vast domain of " things that are Cæsar's," and both adultery and free sexual relationships were judged from a realistic and altruistic point of view. Early Christianity did not even trouble to invent any special marriage ritual or to sanctify exclusive monogamy ; it was without any system of metaphysics. But it was one of the products of an age in which the later Hellenistic philosophy and the cults of Mithraism, Gnosticism, and other Oriental speculations met and intermingled in Northern Syria, and very speedily there followed on the first phase a second which was full of morbid elements and incompatibilities, and to which additional features firmly attached themselves, as happens in all such movements.

### (2) The Age of Paul of Tarsus and of the Fathers

System now becomes apparent, and the morbid ideas of later Greek philosophy dominated and stifled the new teaching, the supporters of which became, as might



be expected, more fanatical. Similar phases of development, though in a less violent and bigoted key, are recorded in the early histories of other great Oriental religions : Brahminism, Buddhism, Confucianism, etc. These ethical pre-occupations and fanaticisms suggest psychotic characteristics. There are negative and depressive mental traits with masochistic manifestations and an inferiority complex and sense of guilt which often reaches the point of actual mental derangement. The centre round which this current of frantic emotions revolve is woman, as the representative and giver of physical life and physical joy. This view of woman's perilous and impure nature is expressed by Paul of Tarsus in the Epistles to the Romans, to the Corinthians, the Galatians and the Colossians. Thus, *e.g.*, in I. Corinthians vii. : "It is good for a man not to touch a woman," and the concession of marriage : "to avoid fornication." Athenagoras described the second marriage of widow or widower as "cloaked adultery." Tertullian went to further extremes of denunciation, together with Cyprian and Ambrose. Jerome († 240) in his controversy with Jovinian, was outraged at the equality of reward (in the Heaven described by Jovinian) between penitent "harlots" and "holy virgins." Clement of Alexandria thought a wife should only admit her husband for the children's sake, so that she might become a holy sister when she put off the flesh. Ambrose was such a glorifier of virginity that he expressed the wish that brides at the altar might be forced to become "Brides of Christ." Archbishop Hildebert, of Tours, in his sermon "*de Continentia*" (76) terms women "vipers, screech-owls, fatal abysses, living graves, more devouring than flame, more cruel than the serpent." Thomas of Aquinas considered woman as an abnormal creature owing to some imperfection of the germ-plasm. If this morbid tendency did not lead to worse results, it was probably due to the more direct and primitive vitality of the Celts and Teutons, who accepted and modified Christian doctrine. The morbid fantasies of asceticism constantly recurred in Christian history, and appeared repeatedly in the form of transcendental ecstasies.

Yet this creed that so abused and vilified woman received devoted service from woman, and often the sacrifice of martyrdoms. In Chapter XVI. of the Epistle to the Romans, we find the names of Phebe, Priscilla, Mary, Tryphena and Persis. Other names of early Christian women mentioned in the New Testament were Tabitha and Lydia, who sheltered the faithful of Philippi in her house.

The services of such women were organised into the special order of Deaconesses. Widows and virgins tended the sick and helped the poor, the slaves and prisoners. Equal zeal in such good works was shown by the housewives and mothers ; they also took charge of orphaned or bereaved children and brought them up in the New Faith.

This active and tender benevolence was the distinguishing virtue of the woman of the early persecuted Christian communities. It has been a valuable and permanent contribution to human ideals and human happiness, and the orator Libanius is said to have exclaimed in reverent wonder : "What women these Christians are !" True Christian charity in deed, word and thought was and still is a blessing, not only to the immediate family and neighbours, but to whole nations and subsequent generations, unlike many Christian tendencies and achievements which appear as inhibitions and superstitions in comparison with the finest fruits of classic civilisation.

### (3) The Age of Later Development

When Christianity became the official faith of the Empires both of East and West, it ceased to have the theoretical and moral freedom of an opposition. It had to deal with terrestrial facts and human forces, and its failure on two of these battle-fronts was prolonged through centuries and was complete. It failed in dealing with



the demands of the human intellect and of the sexual instinct. The Christian dogmatists stigmatised the most normal and necessary forms of physical intercourse between men and women as "lust of the flesh," and treated lovers, even wedded lovers, as morally inferior to celibates. Their creed could not really benefit either the community or the race, and the reactions in various ethnical stocks were illuminating. Mediterranean civilisations collapsed under Christianity, losing heart and "will to live." The Celts developed a highly wrought mysticism, but the reactions of the Nordic peoples were more positive and constructive. The ancient legends and myths of the Teutons and Scandinavians and their social customs had much that was noble and racially virile, and might have evolved into a creed and code directly rooted in and redolent of the soil of Northern and Central Europe. In the struggle between Christian doctrine and racial instinct, the Christian doctrine displayed considerable adaptability, and evolved the cult of the Madonna, the representative and incarnation of purity and tenderness. There can be no doubt that this imaginative creation is the finest gift that Christianity has given to the world, and its destruction in Protestant communities is a psychological loss which can never be made good.

The struggle for intellectual freedom led to another creative compromise on the part of organised Christianity: the Art of the Renaissance in which, once more, human beauty was immortalised and even the naked body depicted, though at first, under Scriptural and ecclesiastical protection. Christian doctrine accepted artistic achievement which adorned and glorified its Churches; but scientific and rational inquiry was too much, and traditional dogma collapsed before this weapon. Luther turned conservative before his death, and regretted much that he had helped to destroy, but the die had been cast.

The great age that we term the Renaissance has left three legacies to the world:

(1) The Catholic Church as we know it, *i.e.*, in its post-Tridentine form, inspired and dominated by the Jesuit Order.

(2) The Protestant Churches, which accepted a certain degree of rational inquiry and repudiated many abuses, but also threw aside many deeply-rooted and emotionally valuable elements such as the cult of the Madonna and of certain Saints and the Great Festivals.

Thus, Protestantism has cut away its racial roots and is slowly disintegrating before the onslaughts of the third factor, namely:

(3) Free scientific inquiry, *i.e.*, rationalism and its expression in science, which is the guide to modern civilisation. Our modern Western world is termed "Christendom" by courtesy only: it is really a form of scientific and technical internationalism which is, in some respects, sharply opposed to both the spirit and the letter of Christianity. Unfortunately, few people have thought out the implications of scientific internationalism: its ethical ideals are unrealised as yet, and there is much needless standardisation. Mental ignorance and indolence continue to attribute the achievements of rationalism and international science to Christian ethics and the official spokesmen of the Churches calmly appropriate the credit due to persons and movements to which they are really alien or opposed.

### 3. THE STATUS OF WOMAN IN PRE-CHRISTIAN EUROPE

Having already dealt with the position of women in Greece and Rome, we shall very briefly summarise the facts concerning their status among other pre-Christian peoples.



Very little is known with any exactitude about the Celtic-speaking people. In one passage of *De Bello Gallico*, Cæsar speaks of the wives of a chief (in the plural number), but his commentators are much divided in opinion on this point, according to Roget de Belloguet. Apparently the household organisation had strong matriarchal elements and, in some cases, it would appear that there was temporary marriage and the woman might leave her husband at will.

Very little is known of the family institutions of the Britons at the time of the Roman invasion, but they appear to have had marked matriarchal elements, and there is a passage in Cæsar (*De Bello Gallico*, V., 14) which mentions what may have been a form of polyandry: "They have their wives in common, 10 or 12 together, mostly fraternally or as between fathers and sons. The children borne by the woman are counted as children of the man who knew her first."

We have also very few exact details about the Slavonic races in the pre-Christian era. Nestor, the Chronicler on whom we must mainly rely, is full of indignation at the customs of the Severs, the Radimich and Viatic, who "had no real marriages," but practised free sexual intercourse at their festivals, together with "dance and song and other devilish games." These ancient village dances still survive among the Yugo-Slavs. Krauss<sup>2</sup> describes the ferocious punishments inflicted on the legal wife detected in or even suspected of adultery, which survived even into historic times. The woman was torn to pieces by wild horses (*cf.* Swanhild in the German legend), or cut into four pieces which were then set up at the cross roads as warnings or smeared with pitch and set alight. Modern husbands in the Balkans have recourse to less drastic measures; *e.g.*, up till the middle of last century (1850), it was legally sanctioned in Tsernagora (Montenegro) for a deceived husband to cut off his wife's nose. The lover of a married woman, if caught, was invariably killed.

Among the Nordic and Teutonic races there are records and traces of extremely primitive customs, indicating past phases of development: *e.g.*, according to Weinhold, the practice of burning the widow on the husband's pyre and the right of the man to bequeath, sell, give away or lend his wife. Other historical and sociological investigators (Sohm, Freybe, Felix Dahn and v. Reitzenstein<sup>22</sup>) have shown that when the early German and Anglo-Saxon women appear definitely in recorded history, they are in strict subjection to their male relatives, especially fathers or husbands. This supremacy of the senior male relative or male marriage partner was termed *Munt* or *Mund*, and, though supreme in the earliest times recorded, it gradually diminished with advancing civilisation. The *Munt*, however, included the right of life or death over wife or daughter should she take a lover, and the right to dispose of the maiden in marriage to a legal possessor for "bride money." It is supposed that, as from the end of the fifth century, women of Teutonic race could possess property, but they could not administer it in law.

The *Munt* was closely associated with the right to bear arms and ordeal by battle. In those days the penalty for the slaying of a man was much higher than for that of a woman. According to the Old Icelandic code, a widow whose eldest son was of age to bear arms passed under his *Munt* or legal guardianship.

The "bride purchase" was, strictly speaking, a transfer by purchase of the *Munt* or guardianship of the bride. Tacitus recorded the gifts given by old usage at the bridal: cattle, a horse for riding, shield and sword. Later in history, the bride brought her dowry with her, but this was personal property, not real estate, until much later in Germany, though the Nordic sagas often mention farms and lands as part of the bride's marriage portion. The man had the right of using and administering such property, but could not dispose of it.



According to Tacitus, monogamy was the marriage form, with occasional examples of polygamy among the wealthy and the chieftains, for political purposes, as, for example, in the case of Ariovistus. Apparently, the more southerly and westerly Teutonic tribes shed the recognised custom of polygamy earlier than the others.

There was also recognised concubinage. These alliances sprang from no considerations of policy or property. The woman was not handed over by her relatives, nor was a price paid. Mutual inclination and passion—or sometimes the wishes of one side only—decided or dissolved them, and the children had not the status of those born in marriage. Concubinage later developed the special form of morganatic marriage, so frequent among the European royal and German princely houses.

Early Teutonic marriage ceremonies tended to be seasonal, and the favourite date was, as a rule, in February; the time limits being from “the feast of Stephen,” *i.e.*, December 26th, to Ash Wednesday. In England, St. Valentine’s Day (February 14th) has survived as the lovers’ festival, even if only in jest and literary allusion.

The marriage ceremony was conducted by the senior male of the bride’s family, who asked the couple in turn if they desired to be husband and wife; on their assent, he gave the man a sword and a ring or circle of gold—in symbol of his guardianship of the woman and duty to protect her and right to her company and person. The couple exchanged rings, the bride also giving the man a token and they repeated a saying or proverb of appropriate nature and solemnly embraced and kissed each other in the presence of neighbours and kin. This deliberate ceremonial embrace was most important and considered binding. To break troth without the gravest reasons after this embrace was considered impossible. Certain Teutonic and Nordic Codes punished broken trothplight with exile.

After this ceremony the bride must enter her new home within twelve months. She was brought thither with pomp and ceremony, bearing the keys slung at her belt and wrapped in linen draperies. She was touched on the breast with a hammer, the hammer of Thor, and the sexual symbol to bring fertility, and then bride and bridegroom drank a beaker of wine together and the guests followed their example, in honour of Odin and the other gods of the north. The bridal wreath was a Mediterranean and classic institution which the Church borrowed from the Pagans and brought into the northern lands.

The Visigoths regarded immorality (although in a different sense from that held to-day) as a Roman prerogative; whilst the Vandals drove out the prostitutes from the towns they sacked. But, in the Middle Ages, we find recognised and organised prostitution as much a part of city life as in classical antiquity. When an earlier wave of Teutonic migration broke over Italy and Marius defeated the Cimbri, in the later days of Republican Rome, the Cimbrian women begged him to respect them and protect them from insult by allotting them as slaves to the vestal virgins in Rome. Marius refused, and the Cimbrian women killed their children and themselves.

It seems to be clear that in the general view of life held by the Northern Teutons women held a peculiar and ideal position. From this arises, as Dahn has pointed out, the fact that the Teuton woman, even in the somewhat crude civilisation where she moved, occupied a more honourable position than that in Greece and Rome. Much has stated that the Teuton women accompanied their men to battle and cheered them on and encouraged them to fresh efforts by baring their breasts as a



reminder of hours of love and as an indication of what fate would await them were they seized in battle.

In religion also women played a prominent part, and the goddesses Frigg, Freyja, Nanna, Gerdhr, etc., are only idealised women.

It may be that the heavy punishments which were inflicted by the early Teutons for rape and assault were due to this high regard for women. Weinhold has published accounts of the penalties exacted for such crimes. With the development of cultural factors and the progress of civilisation the status and position of the female sex grew proportionately better.

#### 4. SOCIAL STATUS OF WOMAN IN THE MIDDLE AGES IN EUROPE

Among the Franks who conquered Roman Gaul and founded the first Christian Kingdom, women played a not inconspicuous *rôle*. Childeric, son of Merovig, had a



FIG. 411.—Hertzog Heinrich of Breslau receives the prize from a lady. (From a MS. of Maness, in Heidelberg.)

secret love affair with Basina, wife of a Thuringian prince; fearing discovery, Basina fled to Franconia and the couple were formally married, their son being Clovis, the brave and cruel conqueror of Gaul. He wooed Clothilde, the daughter of the Burgundian chief, sending his faithful retainer Arelianus to the Genevan cloister in which she was living. Arelianus went disguised as a beggar and was received and tended with gentle courtesy by the Burgundian princess; then he revealed his



mission and gave Clothilde the ring of Clovis. The subsequent history of the Merovingian line is one of degeneracy.

Charles the Great possessed five lawful queens and five concubines, chosen for their comeliness rather than their rank or wealth. The legends of the loves of his daughters, Emma with her father's biographer and historian Einhard (*fl.* 800), and of Bertha with young Engelbert are well known. The Capitularies of Charlemagne and the Chronicles of Einhard and Alcuin throw some light on our subject.

It is interesting to follow the results which the mingling of the customs of the Teutonic peoples with the Gothic and Roman elements had on the position of women. After the kingdom of the Franks had been founded new customs arose which were



FIG. 412.—A hawking party. French, fourteenth century.

not without influence, and Krabbes has tried to show this from a consideration of early poetry.

The position of girls in the ruling classes of the early Middle Ages was distinctly subordinate. The daughter of the house was trained rigidly to household duties and hospitality. She welcomed the guests, brought water for washing, loosened their armour, fed and watered their horses and conducted the guests to their rooms. The instruction of these girls appears to have been somewhat less rudimentary than that of their brothers. They learnt foreign tongues, and, above all, the romance languages. The ancient *chansons de geste* do not lay any stress on the shrinking shyness of their heroines; on the contrary, they are represented as both eager and quite experienced in love. The amorous nature of man, on the other hand, is not emphasised and often hardly mentioned, and it was not perpetually provoked by moralistic prohibitions. Where a man desires the favours of a woman he scarcely endeavours to court her, so sure is he of final success. As depicted in the old French epics, marriage is a matter of mutual convenience and protection rather than love. But the tenderness



and devotion of the wife is often extolled—so long as the man meets her requirements in knightly prowess and efficiency in warlike deeds. These women preserved their affection for former admirers, and had no hesitation in loving outside marriage if they were so inclined or if the occasion were propitious. The general attitude of the man towards marriage was not one of great interest and esteem. His own fame and deeds in arms and the acquisition of lands and property mainly occupy his thoughts and energy. He rebukes any attempted interference on his wife's part, in very drastic terms, and punishes detected or suspected adultery with the death sentence which may, however, be transmuted to perpetual banishment. Adultery on the part of the man is not mentioned in the poems.

By the thirteenth century, in the German territories at least, the unmarried woman had gained the right to hold and dispose of private property. But the wife



FIG. 413.—Men and women dancing. Rudolph von Ems, fourteenth century. (Bayr. Landesbibl., Munich, C. gm. t.)

was still in an inferior position to her husband, this being an essential part of German law.

In the age of chivalry women were dedicated to a kind of fanciful service. They were the centre of a rich social life, and the love of women not only governed the hearts of men up to a certain point, but also influenced poetical fancy. From this time the position of women began to change.

The woman of this period had received a certain degree of information and a considerable proficiency in music, writing and reading during her secluded girlhood. She made her own clothing and her husband's and executed marvellous embroideries. In the art of healing she was also instructed, and a tender female hand knew well how to care for the wounded knight. She presided at the tourney and crowned the victors in the lists (Fig. 411), and she rode out hunting and hawking beside her husband and kinsfolk (Fig. 412). The noble lady had the privilege of being the first to offer greeting when she met a knight, and the grace and dignity with which the greeting was offered was highly praised by the great Minnesinger, Walter von der



Vogelweide. The most honourable and intimate form of greeting was a kiss, always a jealously guarded distinction (*e.g.*, *Nibelungenlied*) reserved for near relatives, guests and specially favoured suitors (Fig. 414).

Monks and priests, wandering minstrels and singers taught the lady of chivalry the Latin tongue and the art of song and playing on musical instruments such as lute and harp. Then there was the elaborate code of correct deportment to be mastered and the household arts and crafts, such as spinning, weaving, tailoring and embroidery.

The Troubadours and the German Minnesingers, in their love poetry, not only used women's lives and emotions as themes, but showed astonishing delicacy of perception and sympathetic imagination in treating these subjects. Woman was "a



FIG. 414.—Greetings. Rudolph von Ems. (Bayr. Landesbibl., Munich, C. germ. 5.)

treasure rich in blessing" to be praised with "clean lips," so sang the Saxon knight Henry of Meissen (*Frauenlob*).

The courtly and luxurious era of chivalry may be dated from the Second Crusade, which made chivalry almost international.

The supreme virtue and grace of a noble lady, wife or maid, at the end of the twelfth and dawn of the thirteenth centuries was *die Mæze*—*la mesure*; measure, equipoise, the balance in mind and deed that avoided all violent exaggeration, the expression of judgment and tact.

The courtly code forbade women to stare or gaze long and intently at any man, but it was an equal breach of good taste to ignore a greeting or return it with casual condescension, and this was the rule towards the poor as well as to the rich and noble. The lady must be careful to walk gracefully, neither with mincing gait nor mannish strides. When she stood still, she was expected to fold her hands across her breast and protrude her abdomen somewhat, and, when seated, she must not bend or part her knees. The code of table manners was very exacting. "Largesse," *i.e.*, charity or lavish generosity to dependents was carried to an insane degree.

The idealisation of woman under chivalry was an aberration, although prefer-



able to the contempt of the Early Christian period. In the fifteenth century the chivalrous tradition collapsed and was succeeded by a hard realism and lack of



FIG. 415.—The Tournament. Scene on a casket. French, fourteenth century. South Kensington. (Maskell, 146. '66.)

culture, coinciding with a development of public prostitution and its organisation and recognition by the State or the municipalities.

Women who were known to be of quarrelsome nature and given to abuse were

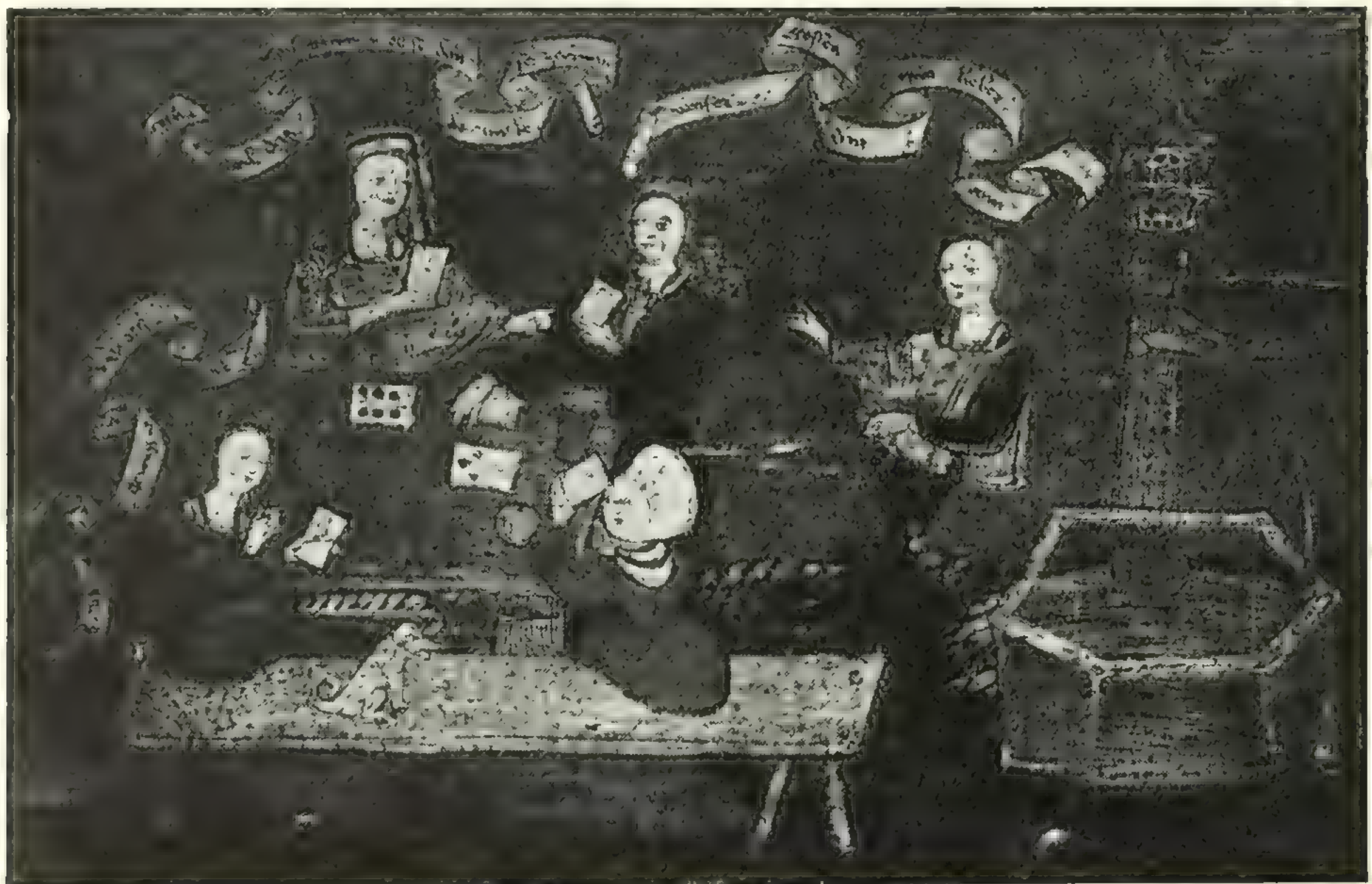


FIG. 416.—Social amusements at home. (Germ. Museum, Nürnberg.)

punished. They were pricked through the town (as in Dortmund in the eleventh century) with great weights slung by iron chains across their shoulders.

Meanwhile, the growth of the guilds in the Free Towns encouraged men to come



together in social life free from women's presence and to indulge largely in drink (Fig. 416). The preachers of the Renaissance from the fourteenth to the seventeenth century are perpetually attacking feminine extravagance and frivolity and the gross excesses at the table of the new bourgeois towns, the drink and debauchery of burgher and prentices.

Those towns which retained a Patrician tradition or class had a better standard of manners : Montaigne, when he visited Augsburg in 1580, was charmed by the decorum and splendour of the Fugger's feasts. The Northern Hansa towns tended to segregate and seclude their women within the home and according to Aubery de Maurier, in 1637, their work was mainly confined to domestic occupations.

Throughout the Middle Ages and the Renaissance, clerical celibacy was a social evil. When it was genuine, it impaired the race and sterilised and secluded many excellent elements ; when it was not genuine, it was a focus of immorality, which undermined the reputation of women. In the eleventh century, Pope Gregory VII. successfully insisted on extending the vow of celibacy from the cloistered orders to the ministers of the altar, and the results can be seen in the literature and satire of the succeeding times \* (*cf.* Haupt).

Luther opposed these irregularities, but he did not intend to make any alteration in the legal conditions of marriage. He believed that matrimonial affairs should be in the hands of the legal authorities and not be controlled by the ecclesiastics.

There are some fine descriptions of married life and the happiness of a well-ordered home in sixteenth century literature ; among others is the " Philosophical Book of Marriage Discipline," written in 1578 by Johann Fischart and containing the famous simile of the hive of honey bees around the household queen.

\* The standard work in English is Henry C. Lea's " History of Sacerdotal Celibacy in the Christian Church."



## B. THE GIRL BEFORE PUBERTY

### INTRODUCTION

The whole life of woman has normally three biological divisions of very unequal duration.

The first may be defined as that from conception—or birth—to puberty, and is also, roughly, definable as the period before the awakening of conscious sexual emotion, though this is certainly not the case with all individuals or types of individuals, and, in many primitive peoples intimate physical relationships—if not complete intercourse—take place before puberty and are fully sanctioned by custom.

The second main period or phase is maturity, which lasts till reproductive power ceases with the final cessation of the menstrual function, or the so-called climacteric, although both sexual sensations and intercourse may continue for many years into the menopause, or third phase, which lasts from the cessation of menstruation till the end of life. The range of duration and dates of onset in the reproductive phases are extremely varied, both in different races and in individual women of the same ethnical stock.

There are natural subdivisions of all three main biological phases. Thus childhood passes from (a) early infancy up to the first dentition, through (b) second dentition, and (c) half-grown girlhood, leading on to maturity. Similarly, in the third biological phase, senescence is clearly distinct from senility (Fig. 417).

The proverbs of all peoples have tried to set up descriptive comparisons of these various divisions. In Germany such sayings are very old. Thus in an engraving by Tobias Stimmer (sixteenth century) a trite saying accompanies the various years of a woman's life. Thus the twentieth year shows her a tender virgin; the thirtieth the lady at home; the fiftieth a grandmother; and the hundredth the occupant of a grave. Similarly, in the ancient East, Böhlingk quotes a Sanskrit verse, comparing girl children to "grape juice," maidens to "sugar cane," mature women to "the juice of the mango fruit," and the aged, hardened but milky "cocoanuts." The ancient Hindus had a rich specialised vocabulary for all erotic matters and sexual manifestations. They called the girl before puberty *gaurî* (the pink one); after menstruation had begun, *rohinî* (the red one); before the growth of pubic hair she was termed *kanyâ*, and before the growth of the breast, *nagnikâ* (the naked). The Angiras gives age-data as to when these terms become appropriate: *gurê* in their eighth year; *rohinê*, in their ninth, *kangakâ* in their tenth and *mayaswala* after their tenth year.

Schmidt,<sup>8, 12</sup> and others give a further and somewhat different terminology, quoted from the *Ratirahasya*, "The Secrets of Love" (see Bilder-Lexikon, II., 592). The data here suggest a much later and longer maturity (*Praudhâ*, or adult



till 55, and *rrdhâ*, after). *Bâla* is the girl up to 16, and from then on to 30 she is called *tarunî* (tender).

In ancient Egypt the terminology seems to have been extensive. It is said that there were more than twenty-five words for small children. Beauregard quoted some of these, which appear to have been common to both sexes; in later childhood different terms were employed.

*Mesi*, the little girl and *mes*, the little boy, were connected with the verb *mes*, meaning "to be born"; *set-et* (for girls) and *set* (for boys) includes the root "*set*," meaning "like," "similar." Applied to small children this expression may have



FIG. 417.—Stages of age of women, seventeenth century. (Germ. Mus., Nürnberg.)

been a compliment to the parents, and may be compared with our expressions, "the image of your father." *Nefer-t* and *nefer* are somewhat more poetical and suggest the charm and grace of youth in both sexes. The terms after puberty are completely distinct. Thus the girl, after puberty, was called *renen-t*, and, a little later, *hennu*, which signified that she was nubile. The wife was *sami-t* (from *sam*, which meant union). There were four distinct and complete hieroglyphic signs for the mother (*mât*), of which one was formed by the genital symbols of both sexes. There were three terms for widow: *kemh*, signified black gloom, deep mourning; *char* suggests a field laid waste and barren; and *nennu* has the sense of "deserted," "deprived of love."





FIG. 418.—A girl from Gazelle Peninsula, New Britain, playing on pangolo.  
(Mus. f. Völkerk., Dresden.)



## CHAPTER I

### THE FEMALE CHILD BEFORE BIRTH

#### 1. RECOGNITION OF SEX BEFORE BIRTH

AMONG the physicians of ancient India it was thought that a fresh clear complexion, rounded abdomen, the right eye bigger than the left, the right breast showing activity before the left, and the right thigh thicker than the left infallibly foretold the birth of a boy. Moreover, if the pregnant woman was in good humour and dreamt of food, of mango trees and water-lilies, the same result might be expected. The birth of a girl was suggested by opposite signs, an oval-shaped abdomen being one of them. If, however, the flanks had filled out and the womb appeared hemispherical in a curving and protuberant belly, then a hermaphrodite was to be expected. On the other hand, if the abdomen was inclined to be pendulous, then twins were to be expected.

Chinese medicine is equally sure that it can perceive and predict the sex of the unborn.

Stenz records that one doctor offered him a wager about it. The key here is assumed to be the rate of the pulse, for it is believed that the pulse in the wrist is influenced by other organs. Rapid and rising pulse is read as indicating a male child and very faint pulse a girl. Other doctors think that the sex of the child can be determined from the footsteps of the mother. In order to test this belief sand is strewn on the floor and the woman is allowed to walk over it.

The Hindu belief in the connection between the male sex and the right side seems to be in agreement with the belief in classical Greece and Rome ; and many of the symptoms were viewed in the same light.

These views were formed on imperfect material, for they were based on the observation of the entrails and uteri of animals slaughtered for food or sacrifice, and most of these were ruminants in whom the uterus is *bicornuate* and of a different structure from that of our species.

A further agreement, in the opinion of the Hindus, Greeks and Romans, was fresh colour and clear skin, which was attributed to pregnancy with a boy, and the first perceptible movements *in utero* were supposed to be earlier in that case.

Pliny is one of the sources for our knowledge of these views. He puts the interuterine movements of the boy at 40 days after conception. The female child is indicated by pallor in the mother, late movements and swellings of groins and thighs. The Arab physicians took over these beliefs and Rhazes added further symptoms, *e.g.*, bright redness of the nipples signified a male child, and a dark or blackish tint a female.

Avicenna is of opinion that the sex of the child can be determined from the different appearances of the right and left side ; whilst Abulcasis thinks that a fair complexion and quick movements indicate a boy whilst retraction of the left nipple and a discoloured and spotty complexion indicates a girl. Hippocrates, moreover, considered that freckles in the mother suggested a girl. In the Middle



Agree these opinions, which were so widely spread in antiquity, also found a place in learned writers.

A Jewish writer, Manoello, born in Rome in the fourteenth century, suggested eight signs of pregnancy with a male child ; among these are the beauty and colour of the mother's face, the increased size of the right breast, the stronger beat of the pulse on the right, the veins under the tongue on the right-hand side are more marked, whilst all those on the right-hand side of the body are tenfold more strong than those on the left ; the nipple of the right breast is dark like that of a camel ; the right nostril often bleeds, and the foetus lies more on the right side of the body than on the left.

In an old collection of recipes on a leaf of a codex of the Bible in a library at Leipzig, and published by Bursian, appears the following : " if the nipples are up-turned, the child is a boy ; if downward, a girl ; if pretty and fresh in colour, a boy ; if dull, a girl," etc. Hippocrates deduced one sign from the movement of the foetus, the male moving at the third and the female at the fourth month.

According to early views, the girl in her mother's womb received her soul two months later than the boy. This view was held and taught by the Talmudists. R. Ismael relates, according to Kazenelson, that the slaves of the Greek queen Cleopatra, the wife of Alexander, had been condemned to death for high treason and had been handed over to the learned for scientific examination. They were permitted to copulate, and after a certain time were killed and dissected. It was ascertained, according to this story, that the male embryos had attained their full development in 41 days while the females had taken 81.

The folklore of pregnancy is full of such beliefs and together with survivals from classical or mediæval times, we find other quaint ideas which are difficult to trace to their origin. In Germany and also in Frankenwald the people think sometimes that when a woman looks poorly and feels especially ill then a boy is to be expected (*cf.* Flügel). In the Palatinate they say that if a woman steps out of bed with her left foot first then she is carrying a girl. In Upper Bavaria a spotty, yellowish colour of the pregnant woman gives the same sign, and also if, in the second half of pregnancy, the hypogastrium is not dark in colour (*cf.* Lammert).

In Styria it is thought that when there is a plentiful supply of apples and nuts more boys are born than girls, the contrary being the case when there is an abundance of pears. Moreover, Fossel states that when a girl is known to enjoy coitus, has a healthy look and says that the foetus is often moving then she will have a son, whereas if she is pale and freckled a daughter will be born to her.

In Serbia inflamed upper eyelids are supposed to indicate a boy, and lower lids a girl ; and in Bosnia and Herzegovina, Glück says that the shape of the abdomen during later pregnancy is observed and noted. If the greatest width is from side to side, a male child is expected, and if forwards, a girl ; whilst bearing a male child tends to darken the nipples. P. Bartels<sup>3</sup> states that some of the White Russians think if a woman feels that the foetus is on the right then it is male, whilst it is female if it is on the left, an idea which apparently has been handed down through ancient medical lore. Similarly, Eram states that the Turkish midwives regard a woman with healthy complexion and bright eyes as the future mother of a son, whereas, if her face is sad and her eyes listless, a daughter will be born.

In Sfax, in southern Tunisia, it is thought that a boy will begin to move in the womb at the third month, whilst a girl will first move at the fifth. Moreover, Narbeshuber reports that in the same locality it is believed that a full, rounded uterus contains a male foetus, whilst when it is longer and more ovoid in shape



the foetus is female. In Italy also we meet many similar beliefs, which, like those of Germany and elsewhere, can be linked up with the views of antiquity. Thus in Modena Riccardi reports that, in the first months of pregnancy, a pale, spotty skin, poor complexion and gastric disorders indicate a girl; and the same sign is indicated if the belly is rounded and little protuberant. Karusio has given an account of the variety of signs believed in by the people of the province of Bari in southern Italy. If a woman wishes to know if she is going to have a boy or a girl she must sit down on the ground and then get up again. If, in doing so, she supports herself on the left side, then she will have a daughter. A pregnant donkey can also serve as a sign, if a pregnant woman rides on her. For the woman's child will be of the opposite sex to the foal borne by the ass. If the petticoat of the future mother puckers over her belly to the right and left then a girl lies beneath it, whereas, if the crease shows in the centre it is a boy.

Another test is for the woman to let a drop of her milk fall upon a hot coal-pan. If the drop spreads then she will have a girl; if it does not then a boy will be born. A sure sign of a girl is the presence of milk 30 days before confinement; if it were a boy the milk would only appear 10 days before.

Again, Jacobs<sup>2</sup> reports that among the Achinese of Sumatra the belief is current that if the right side of the belly of a pregnant woman appears heavier than the left then she bears a female child in her womb; and a darkish hue in nipples and areolæ supports this conclusion. In the Philippines also Mallat states that the midwives busy themselves very early on the question of the sex of the future child, but details of their beliefs are not, it appears, well known.

Thus, with a few differences in detail, we find the same trend of ideas. Following the old idea of the bicornuate uterus we see the right side of the mother regarded as the stronger, the more sacred and the more lucky; and as this is a sign of a male foetus so we find that if the mother is healthy, with a strong pulse and the feeling of vigorous foetal movements, then she will be blessed also with a son.

For many years attempts have been made to determine in a precise fashion the sex of a child before birth. In 1863 F. A. Schurig discussed the matter in a small treatise published in Leipzig, and in 1866 M. Thaléby wrote a book on the same question with the title of "*Mégalanthropogénésie*." In 1897 Schenck stated that sex could be determined by the nutrition of the mother, but his assertion indicated his lack of acquaintance with the subject. As late as 1909 E. Rumley Dawson tried to show that the ovaries ovulate alternately but his results are discredited. More recently Lüttge and Sellheim have contributed to the discussion.

## 2. SUPERNATURAL TOKENS AND SIGNS INDICATING THE SEX OF THE UNBORN CHILD

In the Hippocratic collection we find some hints and recipes for this purpose, including the following test:

"Let milk mixed with meal be made into a paste and then baked over a small flame. If it burns, she is pregnant with a boy; if it rises, with a girl. Or throw leaves into the milk and look closely. If it clots, the child is a boy; if it flows freely and thins, a girl."

In Salzburg and Upper Austria, according to Pachinger, there is the belief that when the woman goes to church at the beginning of the last month the sex of the child will be that of the first person she meets on the way, and that, if she meets no one, that there will be no subsequent pregnancy. There is a similar superstition



among the Saxons of Transylvania, according to v. Wlislöcki, but the test is not the walk to church but a glance at the village street while standing astride one of the beams of her loom.

The Transylvanian gipsy, according to the same authority, takes an egg, breaks it into a bowl without separating the white from the yolk, fills her mouth with water and squirts the water into the bowl. If the egg floats on the surface when investigated the next morning, she is pregnant ; if yolk and white are separate she will have a son ; if yolk and white stick together a daughter will be born.

Petrowitsch and Krauss give examples of tests in use among the Balkan Slavs. Krauss relates that among the Orthodox Jugo-Slavs the most important test was the state of the entrails of the swine slaughtered and disembowelled for the Christmas feast.

Demič has recorded old customs and beliefs among the Russian peasantry. Difficulties and pain in the first three months are held to indicate a girl ; in the later months a boy. If the woman dreams of a knife or an axe, her baby is a son ; a daughter if she dreams of wells and flowing streams (Esthonia). If the woman is usually pallid but flushed during pregnancy, her child is a son. The old belief that boys move a month earlier in the womb than girls is also held in parts of peasant Russia.

Böcler has studied the Esthonian peasantry. He found the picturesque dream symbolism of knife or axe *versus* stream or well firmly credited in Wiru, and also a belief about simultaneous sneezing of two expectant mothers, which is exactly contrary to the experience of Kreutzwald in that region.

The Lapps consult the moon, according to Scheffer's account. If a star is close to the moon, and above it, the child is a son ; if below the moon's orb, a daughter.

Carič gives an account of the Dalmatian beliefs on the island of Lesina : the cuckoo that perches on the roof of the woman's home denotes a girl ; the screech-owl a boy. In neither case must they be mentioned : it is etiquette to ignore the birds, otherwise the unborn child may be prematurely still-born or be hideously deformed.

Landes says of the Annamite women that the auguries depend on whether the woman turns to right or left when she is called from a distance.

The Maori believe that dreams are the best indication, and especially the dreams of the father. Visions of human heads or skulls crowned with feathers predict the birth of children ; if the feathers are *kotuku* plumes, the child is a boy ; if of the *huia* bird, a girl.

Jacobs<sup>2</sup> describes the beliefs of the Achinese women in Sumatra. Their beliefs vary from the majority of such superstitions, for they regard good spirits and gaiety during pregnancy as a sign of a daughter, and depression and irritation as indicating a son. A furrow along the middle line of the abdomen is taken as a sign that twins will be born. There are also tests with milk from the woman's breast in the later months.

The islanders of the Moluccan Archipelago are also experts in these matters, or rather their wise women are adepts, but keep their trade secrets. On the Kei Islands and the Aru Islands mystic rites are performed and prophecies uttered. On the Babar Isles the husband slaughters a young pig and the condition of its heart is an infallible indication, which may be supplemented by killing and opening a hen. On Leti, Moa and Lakor, the women who have painful cramps in the muscles of the back of the thighs expect sons. On the Amboina group the lowest region of



the abdomen is considered to be largest and most prominent when a boy is carried, and the upper region when a girl, according to Riedel.

The Djakun women in Malacca, according to Stevens, wait till they have dreamt of a certain number. Then they keep vigil, accompanied by their friends, for as many nights as the number, and listen for the call of a bird, a deer or a beast of prey. The first time such a call is heard if it comes from the right, the child is a son; if from the left, a daughter (M. Bartels <sup>7</sup>).

Even as early as the seventeenth century the Parisian surgeon, François Mauriceau, stigmatised the utter folly of these infallible signs. He writes: "It is no great matter to satisfy the curiosity and disquiet of a Woman, who desires to know whether she be with Child or no; but there are many, if not most, that would have one proceed further, and tell whether it be a Boy or a Girl, which is absolutely impossible; though there is hardly a Midwife that will not boast her self able to resolve it (in effect it is easier to guess, than to find the truth) for when it happens, it is certainly rather by chance, than by any knowledg or reason they could have to enable them to foretel it. But sometimes one is so pressed and importuned to give judgment, chiefly by Women who never had Children, and often by their Husbends, not less curious, that one is obliged to satisfy them as much as possible in that case, by the examen of some signs very incertain" (H. Chamberlen's translation, p. 43). So did the chief city midwife of Augsburg, Barbara Widenmann, in 1735, in her "Anweisung christlicher Hebammen," when she says "No one knoweth save only God."

### 3. MALE AND FEMALE BIRTHS COMPARED

In ancient civilisations, both classical and Asiatic, it was firmly believed that the births of girls were harder and more often fatal than those of their brothers.

*Statistics giving the averages of boys per 100 girls.*

Countries.	Male still-births.
Italy . . . . .	137
France . . . . .	145
Prussia . . . . .	129
Bavaria . . . . .	132
Saxony . . . . .	130
Thuringia . . . . .	125
Wurtemberg . . . . .	131
Baden . . . . .	128
Cisleithan Austria . . . . .	131
Belgium . . . . .	134
Holland . . . . .	128
Sweden . . . . .	134
Norway . . . . .	129
Denmark . . . . .	130

Aristotle, Pliny and Galen express this view. Galen based his opinion on the greater activity of the male and his stronger movements within the uterus, holding that these independent movements of boys continued during expulsion and helped the process.



rotations" as they lay differently in the womb, the position depending on the positions adopted by the parents during coitus. Labour was considered therefore more difficult with girls than with boys.

There can be little doubt that the number of still-births among male infants is much the higher. It seems as though the process of birth were more difficult and perilous for boys.

According to Wappaeus, the sex ratios of live births were : to every 100 girls, 105·8 boys ; and of still-births\* : to 100 girls, 140·3 boys. In the fifties of last century, Quételet investigated the statistics of various European states and found 133·5 males to every 100 females. Statistics, covering the dates 1865–1882, give the averages of boys per 100 girls (see Table on page 545).

In examining the actual figures of these averages, we do not find sufficient material to draw any special inferences. But the large number of male still-births in France and Italy is conspicuous. An even higher rate was found for Massachusetts from 1879 to 1881 (*i.e.*, 148).

With these may be compared some recent figures of still-births in various countries :—

Year.	Country.	♂	♀
1926	Italy . . .	24,766	19,166
1927	France . . .	15,221	11,200
1928	Germany . . .	21,140	16,822
1928	Belgium . . .	3,635	2,640
1928	Netherlands . . .	2,542	2,075
1927	Sweden . . .	1,464	1,091
1928	Norway . . .	715	585
1928	Denmark . . .	899	737

Again the male still-births are in excess of the female.

Simpson, Veit, Breslau, Olshausen, Ploss,<sup>2</sup> F. J. Browne, Eckhard and Götz have investigated the causes of this phenomenon. They found the average weight of the boy child greater and the cranial circumference wider than the girls'. Olshausen maintained that the cranial difference (less than 1 mm. on an average in its maximum diameter) was not a sufficient explanation. He thought that rhachitic women and those with narrow (contracted) pelves, had a special liability to produce boys, and gave figures in support of this, based on work at six clinics. He found that among the births to women with contracted pelves, there were 310 boys to 211 girls ; a ratio of 150 to 100. As he himself remarked, male births, being more difficult, are more frequently brought to the doctor's attention, but his results are so striking that further investigation is necessary in order to ascertain beyond doubt whether rhachitis is definitely correlated with a tendency to produce boys.

[In England and Wales from 1928–1931, 60,252 males were still-born, and 48,685 females. In an examination of 300 still-born foetuses, Eardley Holland found that 51 per cent. of the cases appeared to have resulted from some complication of labour, injuries to the head being very frequent. He came to the conclusion that 53 per cent. were preventable.

The Babylonian Talmud was of the same opinion : girls had to make " more

\* [Properly speaking, a *still-birth* is a foetal death taking place after the twenty-eighth week. Before that time it should be regarded as an *abortion*.]



Similarly, the few statistics available for India suggests that labour complications play an important part in still-births. In 1929, in Bombay, 32·2 per cent. of the foetal or neo-natal deaths were ascribed to this cause ; and in Madras the estimate in 1929 was 30·6 per cent. out of 979 cases investigated (see C. J. Thomson,<sup>1</sup> p. 18).]

Further data and research on all these matters and on foetal and embryonic life generally are urgently necessary in order to solve the problems dealt with in this chapter.



## CHAPTER II

### WOMAN DURING CHILDHOOD

#### 1. THE RECEPTION OF THE NEW-BORN GIRL

AMONG many races, the birth of a daughter is accepted as a misfortune, and even, in some cases, as a discreditable and shameful affair.

The Turks of Central Asia, when Vámbéry visited them and reported on their customs, had the following verses as a popular proverb :—

“ If a daughter is born to thee, better she should not live ;  
Better she should not be born, or, if born,  
Better the funeral feast be with the birth.”

The Kirghiz says : “ Keep not thy salt too long or it melts away to water ; keep not thy daughter or she becomes a slave.”

The Ossetian woman returns to her father's home when about to give birth ; if the baby is a girl, she comes back to her husband empty-handed ; if she has a son, she brings rich gifts from her father's household.

Similar customs obtained in Georgia, according to Bodenstedt.

The founder of Islam reproved the contempt shown to girls by the Arabs of his time : the relevant texts of the Koran are Sura 16 (“ The Bee ”) and Sura 17 (“ The Night Journey ”). “ For they ascribe daughters unto God Himself. Glory be to God ! They desire them, however, not for themselves ! For when the birth of a girl is announced dark shadows settle and the father is sad. He conceals the ill-tidings from the people. Is he to keep it with contempt or bury it deep in the ground ? Are they not wrong ? ” And again, “ What ! has God prepared sons for you, and taken daughters for Himself ? Indeed, ye speak that which is dreadful.”

The Jugo-Slavs of Montenegro also used to receive their new-born daughters with grief and almost scorn, and this view was even held among their rulers and leaders. The mother of several daughters and no sons was expected to summon seven orthodox priests to exorcise evil spirits from the house with holy oil and by replacing the threshold of the house with a new one. In Bosnia, the blessing of a priest was also sought in order to “ *break the spell*,” and if this failed, the woman had recourse to a primitive “ nature cure,” summoning the deities of fertile earth and running water to her aid. She went to a meadow in which there was a running stream or well ; dipped her finger in the water, sprinkled her body, picked some grass blades, and hid them in her bodice saying :

“ Little field, by God's mercy, be thou my sister !  
Let thine be mine and mine be thine !  
To me a son and to thee rich hay ! ”

(Milena Mrazovič)

Strauss has quoted a Bulgarian folksong in which Momir Beg, the Voivode, threatens to chop off his wife's hands and feet and put out her eyes if the child whom she is about to bear—the tenth—is another daughter.



Riccardi has also mentioned the poor welcome received by the girl babies among the peasantry of Modena ; and Marcoy, the disgust and dread with which the parents receive their new-born daughters among the Conibo, a South American tribe on the Ucayali in Brazil.

The Asiatic aversion to female children is well known, and the most pronounced example is perhaps to be found in China, for here, ancestor worship comes into play, as also among the Japanese (*cf.* Giles,<sup>5</sup> p. 97). Unless a son is able to perform the ritual sacrifices, his father must hunger and thirst perpetually in the world of shades.

The people of Peking gave an only daughter such names as "Call a boy!" "Make a son come!" "Beckon for your brother!" and so forth (Grube). And, in Japan, according to a proverb quoted by Ehmann, "the glory of a man is a seven-fold glory."

The ancient Hindus justified their contempt and oppression of women by a modification of their doctrine of reincarnation and transmigration of souls. If in former lives, states Schmidt,<sup>8</sup> much guilt had been incurred and evil deeds done; the soul was punished by rebirth in a woman's form.

A similar attitude of resentful disappointment is recorded among the Arabs of Algeria and Tunisia, the Vigur of Central Asia, the Caucasian Chevsur, the Sarts of Tashkent and the Fiji islanders (among whom, according to Blyth, the women have the lowest and worst status in all the South Seas).

Modigliani has mentioned the belief of the people of Nias ; they call on a special deity, *Adù Lawuri*, at marriage, in order that he may keep the wife healthy and send male offspring.

This conviction of the undesirability of female offspring and the inferiority of women generally is crystallised in the various ritual observances after childbirth of many religions, as we shall record in detail.

Thus Weissenberg<sup>3</sup> points out that the Hebrews are particularly anxious that their first-born shall be a son. In ancient Rome, the priests of the temple of Juno, received a quadrans for a girl child, but a sextans for a boy.

In the folklore of the German peasantry, there are unmistakable traces of the same beliefs. In Schaffhausen (Switzerland), a young girl relative or friend of the family informs neighbours of the expected event, and wears one large spray of flowers in her bodice if the child is a girl, but carries in addition a still larger bunch in her hand if it is a boy. An old custom of Zurich was, according to Bluntschli, for the father of a daughter to receive one *fuder* of firewood, but if the child was a boy, he had a double amount.

According to Markgraf, the same trend of opinion is shown in the old judicial decrees of Alflen (dated 1507), and Steinecker (1506), in the Moselle district ; but the distinction was not shown in kind, but in the number of holidays allowed to the fortunate father.

In the valley of the Adige in Tyrol, among the shepherds, the number of rifle-shots fired shows whether a boy or girl has been born. With this may be compared the ritual etiquette of European royalty. The guns used to be fired 101 times for a son and heir, but 35 for a royal lady. In Great Britain, this custom is modified to 21 for the prince and 20 for the princess.

The Annamite mothers and their attendants and kinsfolk, during the seven days following the birth of a boy, or the nine days after a daughter, are careful not to pronounce the names of any diseases or of death or injuries, in order to avert the omens. Moreover, just before the baby is a month old, there is a second sacrifice



to the goddesses of motherhood and childbirth ; this takes place one day sooner for girls than for boys (see Landes).

According to Dorsey, the Omaha Indian rejoices equally in all his children, and even takes special care of his more helpless girls. Similarly, Viehe reports " great joy " among the Ovaherero of South-West Africa, for, although " a son is generally more welcome," the father of a comely girl can get a good number of cattle from her bridegroom in years to come. The midwife among the Herero comes to the door of the hut and calls "*Okauta !*" (" a bow ") for a boy, and "*Okaseu !*" (" an onion ") for a girl, thus indicating their future employments in tillage or the chase.

There are also races among whom the girl is more welcome than her brother. Roth quotes Low to this effect as to the Sea Dyaks of Borneo, who pray for girls for preference, since they are more useful to them than sons. The same is true of the Battak (see Leeuw, p. 245). The same tendency has been observed among the Malays of the Aru Islands—due perhaps to the future bride-price and marriage portion ; for all those present at the bride's birth then receive " largesse " which they spend in a tremendous feast ; pigs are killed and an incredible amount of *arak* is consumed on these occasions. The son has no such welcome, and reproaches are even cast against the unfortunate mother. An Aru girl is often promised in marriage at birth, and the amount of her dowry is settled in advance (v. Rosenberg).

The same is true of the African Hottentots and other South African tribes. The reasons may be strictly utilitarian, for the girl, when she becomes nubile, will bring her father many cattle as her bride-price, and thus many daughters mean wealth, actual or prospective.

## 2. INFANTICIDE : MALE AND FEMALE

We have already mentioned the deliberate destruction of male infants in connection with the Amazonian legends. Maqrizi is particularly definite in his account of the Beja, among whom the women were skilled in the craftsmanship of making lances, but lived in a mountain fastness which a man might only visit at certain times of the year to buy lances. On these occasions there was intimacy between the sexes, and children often born in due course to these women in their remote fastness ; and reared if girls, but killed if boys. The tale is recounted by Hartmann<sup>5</sup> and we find something similar among the Agni tribe in Western Africa. But infanticide is more common when applied to female children.

Again, according to Hauri, the pre-Islamite inhabitants of the Arabia were in the habit of burying their new-born girl babies alive in the sand. And there seems no doubt that female infanticide was, and is, frequent in Hindustan (see Mante-gazza<sup>1</sup>) in spite of the efforts of social reformers, religious missions and the Infanticide Act of 1870. The answer to the reproaches of Occidentals is : how is the infant to be fed and supported till puberty, and who will pay her marriage portion ? (cf. Böhlingk and Kirchhoff).

At the other side of the world, in Greenland and round the Cumberland Sound, the female infants are often killed. Schliephake is of opinion that female infanticide is responsible for lowering the population.

According to Eitel, the slaughter of girls is habitual among the Hok-lo, Hak-ka and Pun-ti, three agricultural tribes of Southern China, in the province of Kwang-Tung and on the frontiers of Cochin-China. The Hak-ka themselves estimate the number of children thus slain at birth as amounting to two-thirds of the total female births. In one small village in which our authority lived and taught for several



years, some Christian women converts made enquiries which elicited the facts that "without exception, all women of that village who had borne more than two children had killed one—and sometimes more than one." If several girls are born in succession, the father kicks or stones the last to death, or smashes its head against the wall, with oaths and prayers that the evil spirit may depart from his house. A common method of disposal is to immerse the infants after birth in the waste receptacle which every Chinese house possesses.

In 1848, the chief judicial officer of the province of Kwang-Tung, whose capital is Canton, issued an emphatic proclamation denouncing and forbidding infanticide. [Although it is one of the features of Chinese life diligently spread abroad by missionaries and others, Giles <sup>5</sup> considers it "an atrocious libel" (p. 96).]

Before the arrival and settlement of the various Christian missions among the Athabaskan tribes on the Eastern slopes of the Canadian Rockies, female infanticide, von Hellwald states, either by strangulation or exposure was customary.

The same practice prevailed among the Eskimo of Behring Straits according to Nelson, but was sometimes deferred till the children had reached the age of four or six years. The parents took them to a desert place and filled their mouths and nostrils with snow, or left them on pack ice or in the tundra, where frost soon ended their sufferings.

But perhaps the widest diffusion and prevalence of this practice is in Oceania, and especially, states F. Müller, among the natives of Australia, mainly perhaps because of hunger and lack of sufficient food to rear the children. Male infants are also sometimes slain, but less often than their sisters. In New Guinea, the favourite method is to break the baby's neck by forcibly bending their head forward with a sharp jerk. The matter is left in the hands of the women, and the men neither dictate nor interfere. Cripples and deformed infants are thus disposed of, and also sometimes perfectly normal infants whose birth has been very prolonged and painful and risked their mothers' life.

The Nuforese of New Guinea sometimes asphyxiate the babies with ashes, and on the Solomon Islands the women on Ugi and the beach district of San Cristobal bury them alive in order to avoid the anxiety and care of rearing them. But, on the other islands of the Solomon Group, this only occurs, according to Elton, if the child is born outside wedlock.

Moncelon states that the New Caledonian women kill their female infants in order to escape the burden and tie of lactation. The fathers keep an eye on their sons, who generally survive.

There are, however, cases of the preferential rearing of girls. Eckardt gives an account of the family customs of the Fijians and Banks Island natives. According to him, the wish to preserve youth and attraction, or injuries by the husband, often lead these women to vent their misery and resentment by killing their babies, but the girl has a better chance of survival, for the Fijians count descent through the mother. According to Roscoe,<sup>2</sup> the first-born child among some of the Uganda tribes is doomed, if a son: did he live, his father would die according to traditional superstition.

### 3. THE LIFE OF THE GIRL

Apart from the customs we have just described and the emotional atmosphere they indicate, there can be few differences in the treatment of early childhood between girls and boys, although the Japanese obstetrician Kangawa was convinced that "from the moment after birth, as the child lies on the mat, the male lies on



his belly and the female on her back." Other nations, however, do not insist on this difference. For details of the treatment and care of young children throughout the world, we may refer readers to the many recent monographs on child study, and especially to the work by Dr. H. Ploss, of which a recent up-to-date edition has been brought out by Dr. Barbara Renz : *Das Kind in Brauch u. Sitte der Völker*. Ploss, in *Das Kind* (ed. 1884, I., 288) quoting certain workers among the tribes of Eastern Australia, describes a special mutilation of the left hand of the girls (cf. Fig. 442) performed at a very tender age. One or sometimes two joints of the little finger are amputated and flung into the sea "to make her lucky in catching fish." We may also refer to the foot-binding of little girls among the Chinese as an instance of differential treatment at a very early age.

In later childhood, there is generally a difference in the games preferred by boys and girls respectively ; but much of this is probably imitative of adults and traditional, *i.e.*, inculcated or acquired.

We have already described various forms of decorative tattooing, extraction of teeth, piercing of ears, lips and nostrils. These are just as frequently, on the whole, and often more elaborately, applied to boys among primitive peoples. Very often, however, there are different times and seasons and different ritual formulæ for the ceremonials of youth in boys and girls respectively. Thus, F. Müller<sup>6</sup> gives the chants intoned by the Maori medicine men over boys and girls in their eighth year, when they are led to the water's edge and sprinkled with a dripping branch of the *karamu* tree in the presence of their parents. The song for the girls may be rendered thus :—

" Dipped in the water of Tu  
Be thou strong, through Tu's strength !  
Be thou strong to get food,  
To fashion garments,  
And mats of *kaitaka*,  
To greet guests and gather  
The wood for the burning,  
And mussels and oysters.  
May the strength of Tu  
Be given this daughter !  
Then shall come the strength of Kiharoa  
To bear me away  
Away to the sandhills of Rangaunu  
Where the spirits pass  
In the night that I know of."

#### 4. THE GIRL IN HER ANTHROPOLOGICAL ASPECT

The bodily proportions of the new-born child are quite different from those of either the adult man or woman. The head is much larger in proportion, and projects further behind the ears. The extremities are longer in proportion to the trunk ; and the trunk is narrower in girth, as well as shorter, at least in the upper portion around the shoulders and thorax. This is due to the relatively great dimensions of the liver in the new-born infant, and to the fact that the organs of respiration can only act and grow after birth as breathing begins. But the thorax responds rapidly as soon as the lungs begin to function, and the chest becomes wider and acquires a normal arch. This process is, of course, equally necessary in both sexes, and to be observed equally.



The general bodily outline does not differ in boys and girls at an early age. If they are dressed alike, it is often impossible to tell them apart. This condition is termed the puerile or neutral phase of childhood, and lasts for varying periods, even among children of the same racial stock, *e.g.*, our own, in Northern and Central Europe. But it may safely be assumed to last for some years. The process of sexual differentiation in the external appearance does not begin at any special year, or last for any special period: it varies enormously, but on the whole, it begins with the commencement of the second dentition, *i.e.*, between six and eight years of age.

During the first few years of life—generally till about three—if children are well fed and of normal constitutional type, they are very plump and round, with smooth, firm flesh on limbs and body. Then, between three and four, they “shoot

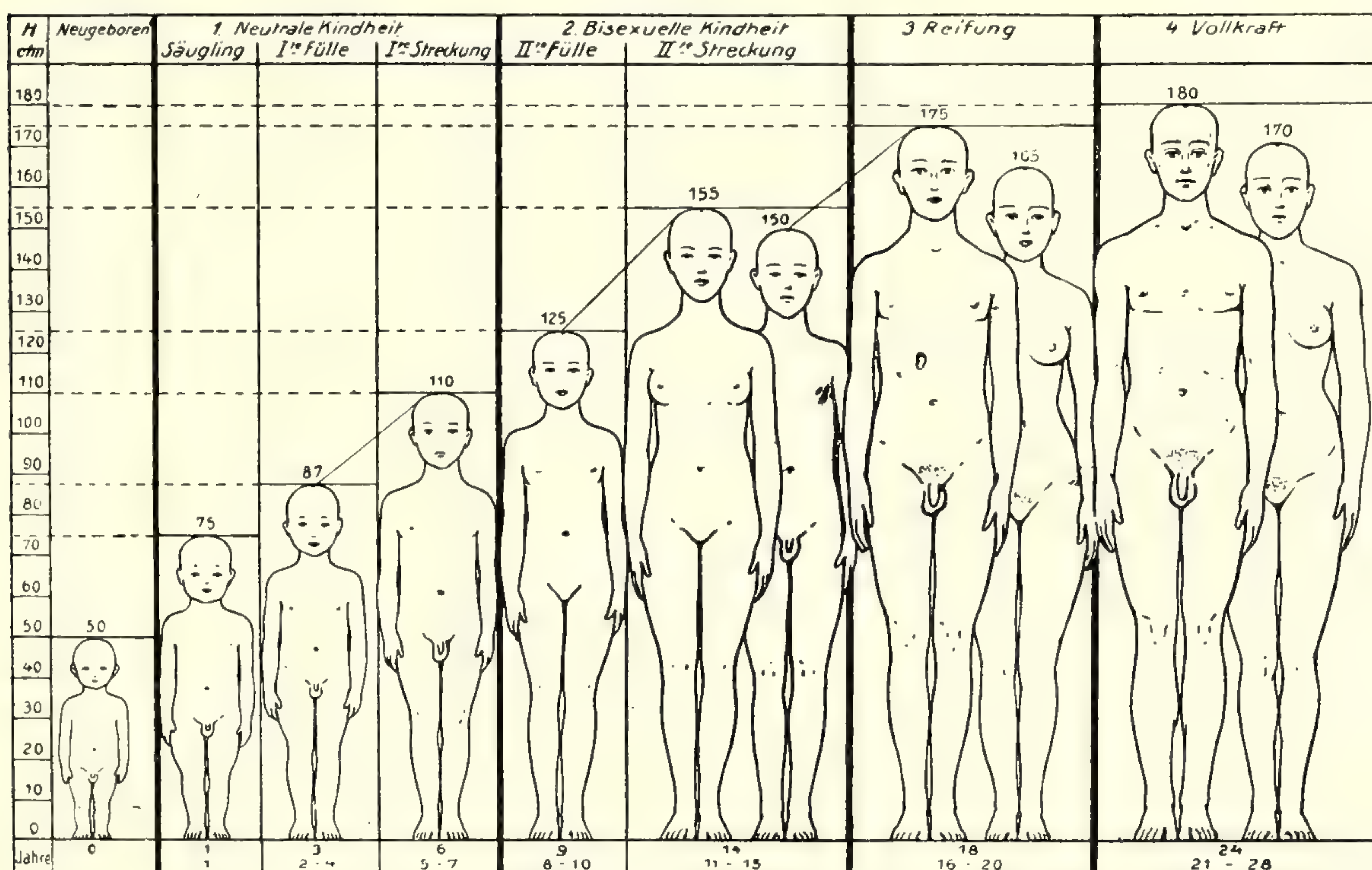


FIG. 419.—Stages in growth ( $\frac{1}{20}$  natural size). (After Stratz.)

up” suddenly, as the common people express it. They grow rapidly in length of body and limb (see Fig. 419) and, at the same time, lose flesh in trunk, limbs and facial contours, often looking frail and wizened, to the great but unfounded distress of ignorant parents. This is the so-called *first spurt of growth*.

When the permanent teeth begin to erupt—generally soon after the sixth year—the immature bodies begin to become plumper and more full, while, at the same time, sexual differences begin to be perceptible. The girl’s adipose layer becomes visibly developed in hips, nates and the upper region of the thighs, especially in their *lateral* measurement. Knees, calves, shoulders, upper arms and the upper portion of the chest are distinctly more rounded than in boys of the same age. And facial expression changes too, and becomes subtly “different” under the double influences of physiological development and traditional education.

Then, at some time between seven and 10 or 11, comes the *second spurt of growth*. This differs from the first, however, for, although arms and legs appear almost



grotesquely "spindly" in proportion, the lateral dimensions of the *pelvis* steadily increase and, simultaneously, the internal changes and ferment begin which presently culminate in the establishment of puberty.

We may now rapidly examine some statistical material on growth in childhood and its pauses and phases.

## 5. SOME STATISTICS OF THE RHYTHM OF GROWTH IN CHILDHOOD

There have been detailed and authentic investigations in this field. The results indicate certain sex differences which are significant for our study.\*

The father of such forms of research was Quételet. He weighed and measured children in schools and orphanages, though only in one country—Belgium. His results were somewhat disputed by Variot and Chaumet, who worked on larger numbers. They measured and weighed 4400 Parisian children, *i.e.*, not less than 100 for each age-class, whereas Quételet's average was not more than 15 for each age-group. The Variot-Chaumet results tended to show that from 11 to 12 years of age the height of girls begins to exceed that of boys, continues thus for about two years, and then drops behind, and that from nine to 11, the weight of girls preponderates throughout a period of about six years.

Then came careful tests on more than 14,000 boys and 11,000 girls from Boston, Massachusetts. Among these children of Anglo-Saxon stock, the rate of development was very good, and according to Stratz, they were bigger and stronger than the Belgians. It might be maintained from the figures that the girls grew more rapidly than the boys between the ages of 11 and 15.

West, F. Boas and several assistants measured 3250 school-children of all classes in Worcester, Massachusetts. They found that the exact measurements varied according to the time of day at which they were taken, being greatest in the early forenoon, and decreasing gradually towards evening. Yet this rate of decrease was more rapid before 12 noon than between noon and evening. This rule was general for both sexes.

West found that the girls he measured grew regularly in stature till 14, but that this growth was much accelerated between 11 and 12, and slowed down from 12 to 13. After 14, this growth relaxes, and at 17 it ceases. The curve of growth in the boys is very similar, but continues till 15, and then decreases. But the full adult stature is often not settled till after 21. At 12 the girls make a decided spurt, and remain taller than the boys for the two following years. Then their rate of growth diminishes while the boys' goes on.

Weight was more difficult to ascertain and follow, as the children were not weighed nude, but lightly clothed. However, the results may be summarised as follows :

In the girls there is a slow increase in weight till the eighth year, at which date there is an acceleration till 12 years of age when the rate falls off, but is followed by a second and more rapid spurt. After 15, the weight increases very slowly and the maximum is generally at 17. The boys' first spurt in weight is round about 11 and then again from 11 to 15, especially at 14, when the increase is double the rate for the previous year (13). After 16, the rate of growth in weight becomes much slower.

The seated measurements from the crown of the head down to the nates (while keeping the spine erect and at full extension) were also illuminating :

\* [For a general account of child hygiene, etc., see Feldman.]



In girls, from five to 10, the annual rate of increase diminishes ; then it doubles at 11, and decreases gradually till 17, which is the period of maximum growth.

Axel Key has given detailed reports on this subject illustrated by graphs and tabular synopses. His material was presented to the Tenth International Medical Congress in Berlin. He had measured 15,000 boys and 3,000 girls of good social position in Sweden. He pointed out the earlier development of the girls and concluded that even among the Northern people of Sweden, the girl attained her adult stature at 17. He also confirmed the brief period—he put it at four years from 12 to 16—during which the girl is both taller and heavier than the boy. By 17, the boy is forging ahead in height and weight. The girl's more rapid growth and earlier cessation of growth is naturally interwoven with the demands of the menstrual function and her particular genital structures.

Key made a careful comparison of his results with those obtained elsewhere. He remarked that puberal development (in height and weight) appeared to be completed at an earlier age in Italy and America than in the other countries under review, and that this was the case with both sexes. But, on the whole, these curves of development with their spurts and pauses coincided with his own Swedish results. He also was of opinion, from the data available, that menstruation generally begins after the girl's growth in height ceases or slackens, *i.e.*, at the end of the general physical growth of puberty.

[The use of the roentgenogram has assisted the study of the acceleration of maturity in the skeleton. By the sixth year the girl shows an advance, but by the time she is eight her progress is delayed.

At the tenth year she again advances

but the boy's progress is then surer and at 16 she is often outstripped. Davenport has shown how the same phenomena can be seen in physical growth. Full adult stature in the white girl is attained about 15 and the full skeletal weight is reached about the same time. In white boys both are attained about three years later. Individual variation naturally occurs, and the factors of disease, heredity and social environment are not to be neglected. Among those whose recent contributions can be consulted are Todd, Baldwin and Wood, Davenport, Borovansky, and H. A. Harris, etc.]

Our knowledge of physical development and rhythms of growth among coloured races is still regrettably scanty. v. Baelz has given us statistics tending to show that



FIG. 420.—Young girl. (Verl. R. A. Giesecke, Dresden.)



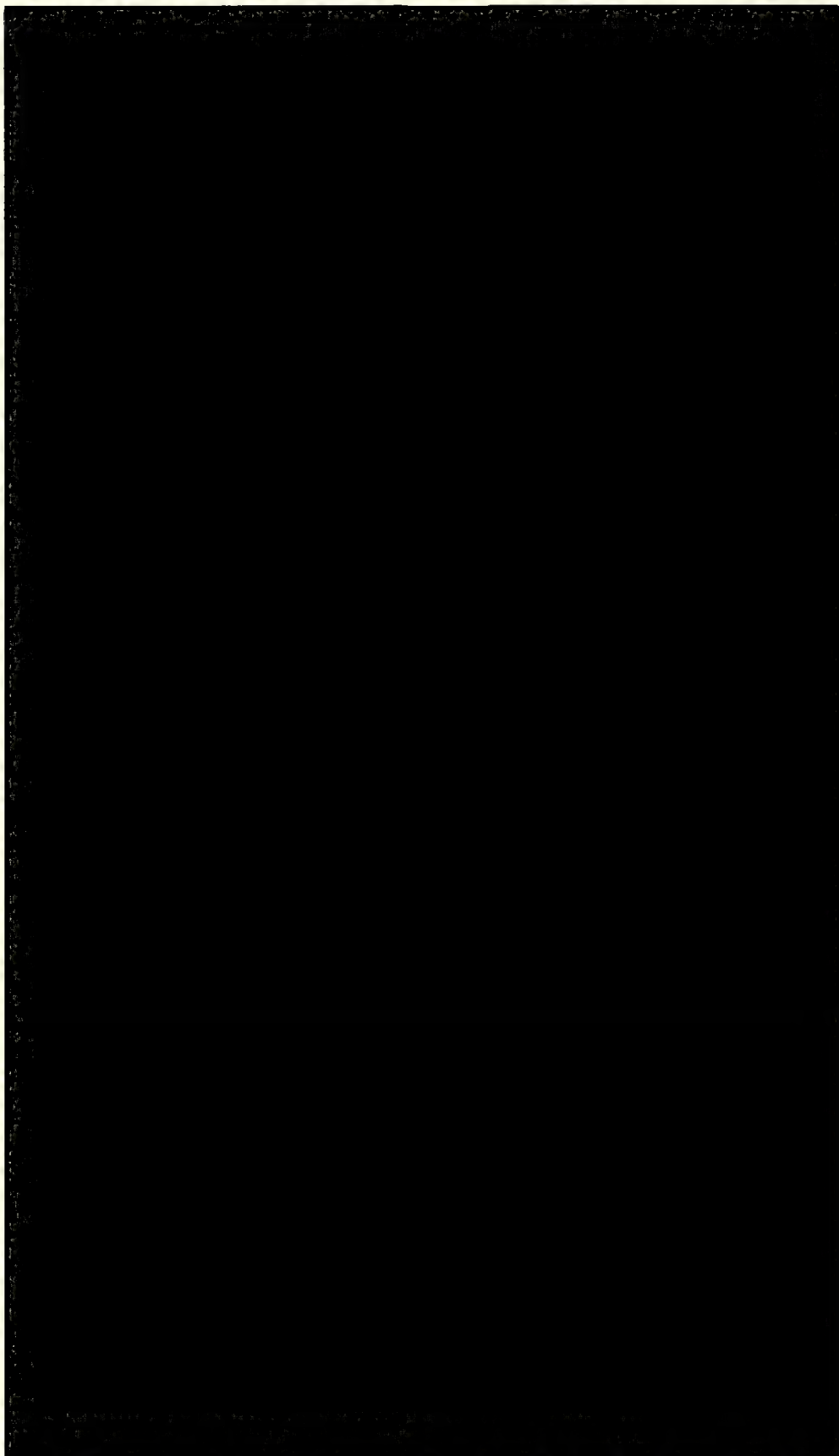


FIG. 421.—Viennese model, aged  $13\frac{1}{2}$  years. Father Spanish, Mother Hungarian. The breasts show the developing nipples and hemispherical areolæ.



Japanese girls usually slightly exceed boys in height till the age of 10, and then slacken in growth.

Reche found the Mission Registers on Matupi Island very useful in his measurements of Melanesian boys and girls, for he could, he thought, ascertain their exact ages. He took exact measurements and obtained very similar results to those recorded by v. Baelz in Japan. But in Melanesia, it was found that the girls were, as a rule, taller up till the age of 15.

These two sets of results for coloured races are extremely interesting for they suggest a very considerable ethnical difference, compared to the white races, among whom the girls are taller and sometimes heavier during a limited period only (*i.e.*, from about 11 years to 15). Reche expressed the wish for further detailed anthropometrical investigations among coloured races, which we fully endorse.

In brief, Reche found that the first spurt of growth coincided with the European, *i.e.*, from five to seven. Here comes the first and very much accentuated growth in width and fullness which is briefer than in Europe, and lasts till the beginning of the tenth year. The second spurt of growth in height begins and ends earlier than among us: among boys from the end of the ninth year to the beginning of the thirteenth; and for girls from the middle of the ninth to the beginning of the eleventh. (The European figures have been calculated as 12–16 for boys, and 11–14 for girls.) The third phase of fullness and rounded growth and weight begins, among Melanesian girls of Matupi, at about the dawn of their fourteenth year and two years later in the boys. This phase of growth is very rapid and ends in physical maturity at the beginning of the seventeenth year in girls and the eighteenth year in boys.

[With regard to the eruption of the teeth little comparative work has been done. Ellis<sup>1</sup> (108 ff.) has summarised some of the facts and suggests that Spanton's results among breast-fed infants in Manchester are worth repeating. The latter writer found that the first dentition began earlier among the females and a corresponding difference may be detected as regards the permanent teeth.

Generally speaking eruption takes place in groups. The lower first incisors are erupted first and usually the whole set of the deciduous teeth are cut at the end of the second year.

In the permanent teeth the first molars are usually the first to appear towards six or seven. The canines often do not appear till the eleventh or twelfth year. For further details see Constant and Tomes.]

## 6. PHYSICAL DEVELOPMENT IN THE LATER PHASE OF CHILDHOOD

The girl of our race enters this phase between the eleventh and the fourteenth year of her life. Her physical development proceeds: her weight increases and her face becomes rounder and softer in outline. Her voice loses the shrill piping note of childhood and becomes softer and fuller in tone. The expression of her whole face changes in an indefinable but unmistakable manner. The thorax and shoulders expand not only relatively but absolutely; the breasts begin to grow, and the nipples to lose the childish form. But the most characteristic region of growth is pelvic; the hips become wider in proportion and there is also marked gluteal development. Thighs and calves, however, often remain undeveloped for some time and have an incongruous effect as they emerge lankily from a body which is rapidly taking the distinctive womanly pelvic proportions.

The pelvic development coincides with development in the mammary zone. The stages there have been investigated and documented by M. Bartels by means



of photographs and statistical measurements among the population of Northern Germany, and Stratz has collected material relative to coloured races which proves that the course of evolution there is virtually the same. We shall briefly summarise the results.

In the new-born baby, whether boy or girl, the mammary gland is set under a reddish area of skin, circular in shape and level with the surrounding skin; this is the *areola* and its centre is the *nipple* or *papilla*, which contains the ducts from the glandular structure. The areola and papilla remain undifferentiated throughout early childhood though their size increases.

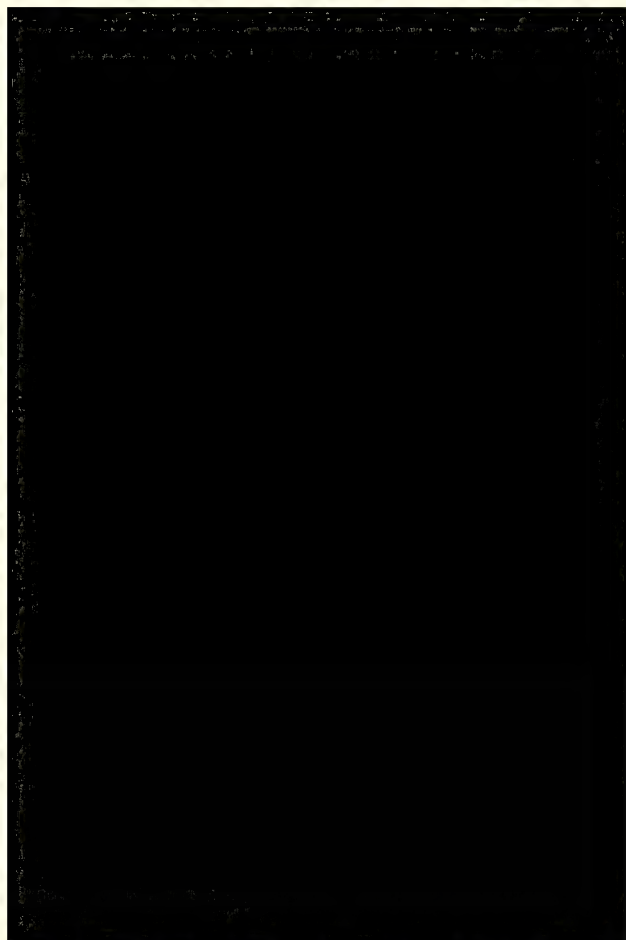


FIG. 422.—Girl of 10 years, showing breasts in the neutral phase. (After Stratz.)

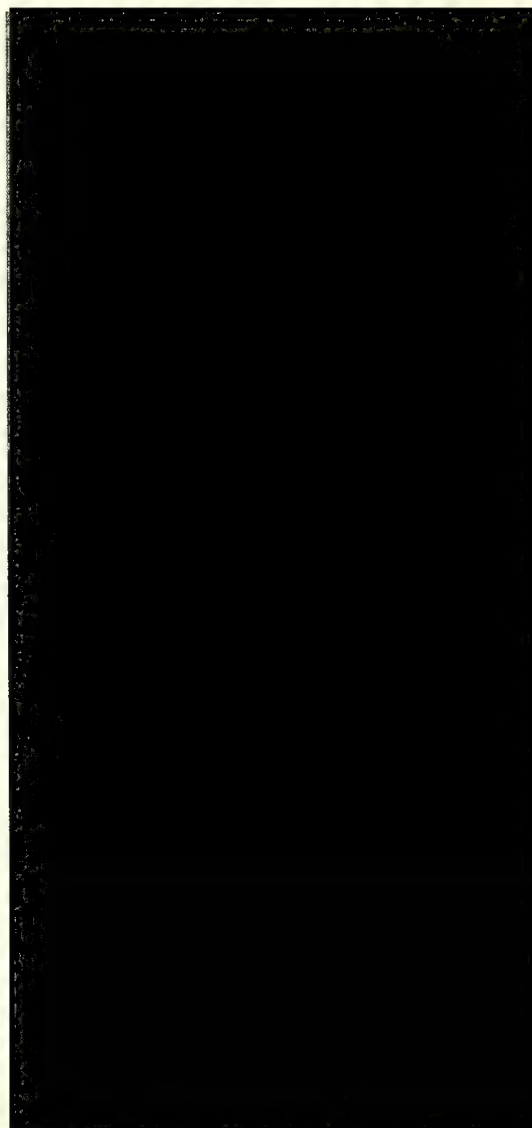


FIG. 423.—Girl of 12 years, showing breasts in the second stage. (After Stratz.)

In the male, the gland atrophies and reverts to a rudimentary state; in the female, it develops structurally and, in normal circumstances, functionally as well.

The first stage of development is, therefore, the puerile or *neutral* phase. Areola and nipple are set on a flat, smooth surface and the undeveloped gland lies beneath like a small flat close-textured disc (Fig. 422). When the second stage of childhood begins, the lacteal gland slowly expands and pushes the areola upwards and forwards so that the nipple no longer protrudes in a small projection as in the



first phase but seems to be absorbed and obliterated in the general expansion. This is the second phase (*cf.* Fig. 423).

This stage of growth sometimes coincides with a certain sensibility so that the slight contact of a thin chemise or nightdress on the skin may cause irritation and discomfort and give rise to parental anxiety. This, however, is not a serious or permanently morbid symptom, as M. Bartels has had occasion to demonstrate.

The second phase of growth changes, as a rule, rapidly into the third—or so-called *mamma areolata* stage. Here the evolutionary process is both (a) externally invisible—for ducts develop downwards from the tip into the interior of the gland—and (b) patent, for there is an increase of fatty tissue in the immediate neighbourhood of the nipple. The contour thus resembles a flat mound on which is poised a smaller mound of much steeper curve, even sometimes hemispherical, and this is the typical adult shape among certain coloured races in Africa and Oceania; that is to say, a breast on which the areola forms a second superposed hemisphere.

In the further development of the mamma the underlying glandular tissue is involved. The whole gland, which is firmly knit together by connective tissue, becomes full and the thick layer of fat also develops. When the structural development is completed, the areola becomes to a certain extent absorbed into the spherical mound and only the nipple rises and projects. It is then possible to perceive and judge the individual variation and diverse forms. This is the stage of the mature breasts or *mamma papillata*.

As a rule, this last stage of development is found only in the white and yellow races, and in both ethnical groups there is a certain proportion of individuals who retain the earlier form throughout life. Among the black and other more primitive races, this earlier type prevails and in maturity it becomes piriform or udder-like in character.

Among the young girls of the white races, all these four grades or stages of development proceed and may be observed, and, in normal circumstances, their sequence is as described above. But as regards the duration of these phases and the dates of their inception, there are very wide and various individual differences, and even in one and the same individual the two breasts may be in different stages of development at the same time.

Among Esthonian girls, whose constitution matures late and slowly, Hörschel-

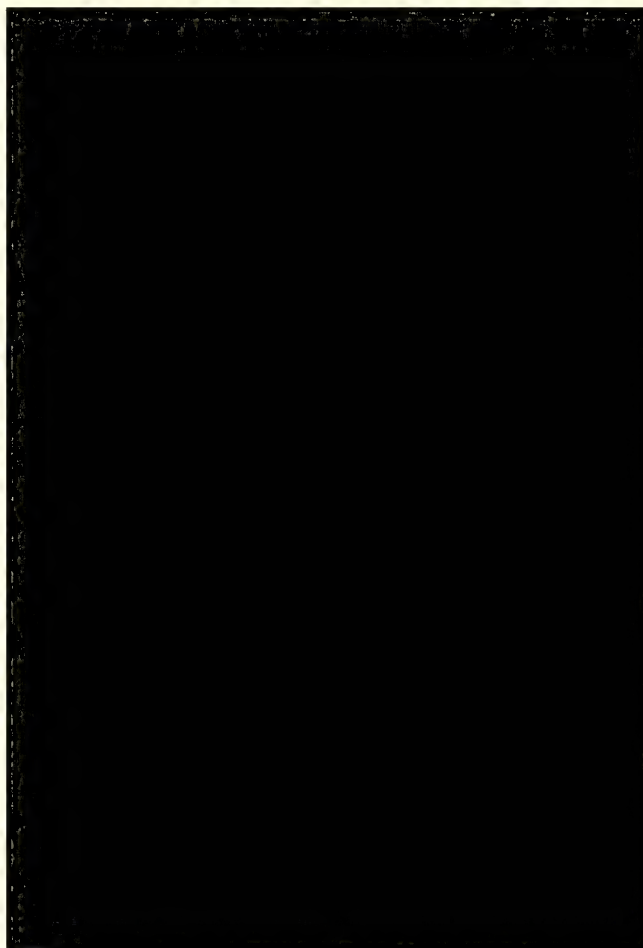


FIG. 424.—Girl of 14 years, showing second stage of breast development. (After Stratz.)



mann found cases in which the third phase persisted till after their twentieth year.

Other important structural changes synchronise with the development of the breasts. The pelvis becomes wider both absolutely and in proportion to the whole frame; the hips and buttocks become fuller and the genital organs and mons veneris begin to show marked development.

The labia majora increase notably owing to the fatty deposit characteristic of puberty, and the mons veneris also grows and protrudes from the general level

before it shows the first growth of pubic hair, which occurs along the middle line near the superior commissure or cleft of the rima pudendi. The growth of pubic hair is, at first, in regular lines parallel to the median, and on either side, then it appears laterally as well and is short, close and distinctly pigmented.

The hairs are first of all short and smooth, running from the median line upwards and laterally and lying close to the skin as is the case with the eyebrows. The general appearance is now what has been described in a Sanskrit verse quoted by Böhtlingk. "The bosom has now already reached a fair width but has not yet attained that height which is most suitable to it. The three folds are already suggested by three lines, but the clearness of the marking has yet to be attained. In the centre of her body long, straight brown hairs are visible. We see before us that delightful period of growth between childhood and mature virginity."

The labia majora get their hairy covering slightly later than the mons veneris, and on both regions the hairs grow more thickly and become



FIG. 425.—Woman from Baluana with exuberant breast development. (Museum f. Völkerkunde, Dresden.)

longer and deeper in tint, often curling and looking quite dense and bushy. The outer lateral portion of the mons, along the groins, is the latest to become covered by pubic hair; and this often happens when all the other signs of puberty have appeared.

The armpits also show changes at this period. The axillary glands become larger and the axillary hair appears first of all in the extreme hollow—or extreme summit—of the armpit; it is generally paler in colour than the genital hair and develops at a far slower rate. The distribution of this axillary hair is also typical; it spreads across the armpit in a line from thorax to arm which bisects the area into a dorsal and a ventral half. Then the lateral portions also become covered.



While these changes are in progress and often before they are quite complete, occurs the onset of the menstrual period.

The changes in the whole physique, both general and genital, at puberty are so complex and extensive that they give great scope for individual diversities and even anomalies. The most usual sequence seems to be as follows : The areolar region of the breast expands and becomes hemispherical ; then the pubic hair begins to appear ; the mammary curves grow more pronounced, and the pubic hair gradually spreads laterally towards the groins. Only when this stage is reached does menstruation, as a rule, begin, [the pubic hair often continuing to grow till after some years from the first menstruation]. The last process, as a rule, is the appearance of the axillary hairs.

The variations in this sequence are frequent and numerous as we have stated. Thus, the mons may be well covered with hair before the first changes in the breasts are apparent, and even the chief or central sign of maturity, the monthly period, may appear in girls whose breasts and pubic regions are still quite infantile. The only rule which appears constant is that the growth of hair in the axillary regions comes after the rest.

It is regrettable that we have as yet no appreciable amount of reliable and precise data such as any general practitioner could easily verify and note down in the course of his practice. We are, as yet, comparatively ignorant as to the precise factors which determine any changes or irregularities in the usual sequence, or any conspicuously early or late onset of the whole process of puberty. Is it interwoven with particular constitutional characteristics, such as are shown in the colouring of eyes, hair and complexion ? Is one course of development "normal" or more frequent in blondes, and another in brunettes ? We can say nothing definite on these matters for we have insufficient data. But we do know that there are girls whose general physique and pelvic, pubic and mammary development are completely "adult" before they have their first menstruation.

Among the girls of Achin, Jacobs<sup>2</sup> recorded that menstruation occurred long after the mammary changes ; girls of 11 or 12 years of age had often very well-developed breasts. Moreover, some of the Sanskrit writers, quoted by Schmidt,<sup>8</sup> seem to suggest that the growth of pubic hair among Hindu girls precedes the changes in the breasts and the onset of menstruation.



## CHAPTER III

### SEXUAL MATURITY AND PUBERTY IN WOMAN

#### 1. THE APPEARANCE OF MENSTRUATION

THE process of development from childhood to womanhood is determined to a great extent by the internal secretions. We have sketched some of their functions in the first chapter of this study and indicated how the maturing hormones of the gonads influence the individual both somatically and psychologically. Expression of eyes and voice change in the girl at puberty as her figure develops and becomes more rounded. Moreover, the varying stages of epiphysial union are important and typical. Psychological changes also are fundamental. Fränkel (in Halban and Seitz) has drawn attention to the spirit of questioning, the need to know "why and wherefore," and to attain a foundation of mental and moral certainties, to the loss of the child's spontaneity, to the reserve and resentment towards adults and parents, and to the abrupt changes of mood and need to form contacts with those of similar age. There are also "flames" and the "crushes" as they are vulgarly termed, between school girls, the secret signs and passwords, the jealousies, sentimentalities and sensualities.

The ovary is a distinctive female organ, but its development from latency to activity is not sudden but gradual. As Fränkel has observed, the ripe follicles do not burst and corpora lutea are not formed until the whole organ has increased in size. Beneath the tunica albuginea lie primary follicles together with follicles of larger size. During childhood the graafian follicles develop but degenerate, and ova are not discharged. Only at puberty does one of these follicles come to the surface, ruptures and discharges the ovum. Thus, *puberty* (apart from the first *ovulation*) is not a sudden crisis but a gradual process. Moreover, we are unable to detect the precise moment of the first follicular rupture and the first ovulation, for menstruation does not necessarily occur, but appears when the follicular hormones are secreted in sufficient quantity.\* Menstruation may precede ovulation and usually there is a period of latency between puberty and nubility, the latter perhaps being present when the final growth of pubic hair is complete. In the years immediately after the first menstruation conception is not usual, although it may occur.

The distinctive signs of puberty have been recognised and referred to in all ancient civilisations from Ezekiel (xvi. 7), who wrote, "Thy breasts are fashioned, and thine hair is grown, whereas thou wast naked and bare," to the Emperor Justinian, but sometimes one or sometimes another has been emphasised or ignored. Thus, Suśruta, the ancient physician of Hindustan, mentions only the monthly period as the proof of feminine maturity, whereas in Rome the test in both sexes was the appearance of pubic hair. The Emperor Justinian is said to have ordered matrons and midwives to examine young girls before they were given in marriage in order to be sure that the brides were really nubile and no longer children.

\* [See H. M. Evans.]



The traditional medical writers of China, according to Dabry, made the following observations about menstruation :

“It appeared in every woman from the fourteenth or fifteenth year as a monthly hæmorrhage (*king-hiue*) from the feminine genital organs (*yn-hou*). It lasted, as a rule, from  $2\frac{1}{2}$  to 3 or 4 days and recurred at periods of 30 days. If it is premature by 2 days, it is called *kan-tsien* ; and if 1 or 2 days late, *tsieou-heou*. Irregularity is of two kinds : *hiue-tshe* or *hiue-kou*. The pains which occasionally occur before menstruation are *king-sien* ; those which occur subsequently, *hng-heou*. The hæmorrhage may be of five different types, according to internal conditions. A clear bright red is healthy ; white suggests weakness and is the result of internal chill ; black implies much overheated blood ; yellowish, excessive bile ; and bluish, a strong chill owing to a draught.”

The medical Talmudists paid much attention to the signs of puberty, and recognised many other symptoms besides menstruation, such as changes in the breasts, elasticity of the nipples and mons, the growth of pubic hair, etc. Primitive peoples on the other hand direct all their attention in this respect to menstruation, and they celebrate the occasion by rites and ceremonies to which we shall refer later with greater detail.

It is generally assumed that, with the appearance of menstruation puberty is attained and the girl becomes nubile. This, however, is not, as we have seen, necessarily the case, and further investigation is desirable. At this stage of our survey we will leave this problem and proceed to discuss what factors are responsible for, or at least suggest, an influence over the first appearance of menstruation. We will begin with that of climate.

## 2. CLIMATIC INFLUENCES

The earliest available material led us to suppose that climate and especially temperature were the main factors in retarding or hastening the first menstrual period.\* According to Suśruta, menstruation generally began in girls at the twelfth year in Hindustan ; the Talmudist Rabbis gave 13 as the more frequent year when referring to the Jewesses of Asia Minor ; and Soranus of Ephesus gave 14 as the usual age for Roman girls. But such Europeans as dealt seriously with the subject before the fifteenth century favour the twelfth year as the decisive date. Albrecht v. Haller agreed with them. He says, with references to other authorities, that in Switzerland and other lands of the temperate zone, menstruation begins at 12 or 13 ; it is retarded the longer the further we go North, and, in tropical Asia, etc., it is accelerated and appears as early as the tenth or even the eighth year (*cf.* VII., 140). For a considerable time medical men accepted Haller's view as correct, and he certainly made detailed inquiries and comparisons into the climatic factor. The average yearly temperature of the country or province is considered the chief factor here, not only with regard to menstruation, but as regards the whole sexual development at puberty. Raciborski, Joubert, Routh and many others have collected and collated statistics on the subject to which readers are referred.

Marc d'Espine has summarised some of these data as follows :

(1) The limits of age for the first appearance of menstruation are between nine and 24 in the temperate zone. The most frequent age is from 14 to 15.

(2) The average age varies widely and it may be accepted as established that, the nearer the Equator, the earlier the average age for menstruation (pp. 312, 313).

\* In 1867 Lagneau made a number of comparative observations on menstruation.



(3) Climate, in the sense of mean annual temperature, is more important than actual latitude, so that the interaction here must be borne in mind.

(4) In such cases where all other perceptible influences are the same and only the climate differs, the variations of average age for menstruation coincide geometrically with those of mean temperature for the countries or regions.

These useful data of Marc d'Espine, however, do not indicate that climate is the *only* determinant here. There are others to be considered.

The British gynæcologist Tilt confirmed the preponderant climatic influence, and, using and confirming the statistics collected by various observers, he concluded that, in hot climates, the average age for the onset of menstruation is 13 years and 16 days; in temperate climates, 14 years 4 months 4 days; and in cold climates 15 years 10 months 5 days. Tilt, moreover, explicitly mentioned that other factors were not without influence.

A Berlin medical man, Krieger, compiled in 1869 a tabular synopsis which gave mean annual temperature, geographical latitude, race or ethnical stock. Climate shows a preponderant influence. If we take the towns and countries according to mean annual temperature, rising from cold or temperate to tropical, we have, according to Krieger, the following averages as dates of the first menstruation.

Swedish Lapland, 18 years; Oslo, 16 years 9 months 25 days; Skeen (Norway), 15 years 5 months 4 days; Stockholm, 15 years 6 months 22 days; Copenhagen, 16 years 9 months 12 days; Göttingen, 16 years 2 months 2 days; Berlin, 15 years 7 months 6 days; Munich, 16 years 5 months 11 days; Vienna, 15 years 8 months 15 days; Warsaw, 15 years 1 month; Manchester, 15 years 6 months 23 days; London, statistics inadequate, but material tends to show between 15 years 1 month 4 days, and 14 years 9 months 9 days; Paris, statistics inadequate, but material tends to show between 15 years 4 months 18 days, and 14 years 5 months 17 days; Les Sables d'Olonne, 14 years 8 months 23 days; Lyons, 14 years 5 months 29 days; Toulon, 14 years 4 months 5 days; Nîmes, 14 years 3 months 2 days; Montpellier, 14 years 2 months 1 day; Marseilles, 13 years 11 months 11 days; Corfu, 14 years; Madeira, 14 years 3 months (but, according to another source, 15 years 5 months 10 days); Deccan, 13 years 3 months; Calcutta, 12 years 6 months; Loheia, 11 years; Akhmyn (Egypt), 10 years; Sierra Leone, 10 years.

Nevertheless, there are certainly other factors of importance besides temperature. Weber<sup>3</sup> discounts climatic influence. He compared various individuals resident in St. Petersburg who had come from all parts of Russia, and came to the conclusion that race and nationality were much more important. Krieger, on the other hand, maintained that climate and also height above sea level were determining factors. He referred to Dubois and Pajot, who tabulated the first menstrual data of 600 women from Southern Asia, France and Northern Russia respectively. The results showed in the first area dates between 11 and 14 years; in the temperate zone between 13 and 16, and in the frigid north, between 15 and 18.

He considered that (a) distance from the sea, and (b) urban *versus* rural conditions had both a certain influence, and although he admitted a certain racial factor, he thought it would be hard to estimate or prove.

Glogner has published some observations which seem more conclusive. He studied 25 girls of white race born in the Dutch East Indies and of families which had lived in those tropical colonies for some generations. In 18 cases out of the 25, menstruation occurred earlier than is the rule in Europe (11-12), and, indeed, no later than in 26 Euro-Malayan half-breeds whose cases he also studied. v. Baelz<sup>6</sup> also made observations and communications on the date of menstruation among



European girls living in Japan, which dated some years earlier than Glogner's, and tended to confirm the same view.

He mentioned quite a number of cases in which puberty was reached by European girls between 11 and 12, but questioned whether this might not be due to "the very fortunate material circumstances of European families resident in Japan," a supposition not easy to understand.

Engelmann,<sup>4</sup> whose paper was summarised in the *Jour. of Obst. and Gyn. of the Brit. Emp.* (1903, 3, 276-277), gave a table of the age of the first menstruation from various sources. The figures illustrate the climatic factor as probably little influencing the age of onset.

	Cases.	Average Age.
Arctic zone . . . . .	624	14.6
Arctic Indians . . . . .	500	12.6
Eskimo . . . . .	—	13-15
„ (another estimate) . . . . .	—	16
Quenas . . . . .	—	15.2
Temperate zone (Europe)* . . . . .	58,737	15.5
Denmark and Norway . . . . .	8,943	16.5
Germany . . . . .	21,258	16
England . . . . .	12,247	15
France . . . . .	7,887	14.6
Italy . . . . .	6,337	14.8
Spain . . . . .	2,025	18.2
Temperate zone (North America) . . . . .	10,531	13.9
Tropics (sub-tropical) . . . . .	2,733	14.8
South of Asia (18°-23° North) . . . . .	1,140	12.9
True tropical zone . . . . .	1,593	15.8
Siam (13° North) . . . . .	104	14.3
Cochin China (11°-17° North) . . . . .	1,244	16.6
Barbados, Demerara (13°-6° North) . . . . .	77	15.6
Batavia (8° South) . . . . .	168	14.6
Somaliland (0°-10°) . . . . .	—	16
Bogasland (0°-10°) . . . . .	—	16

\* [Cf. also Škerlj.]

We may therefore conclude, especially in view of testimony from Krieger, v. Baelz, Glogner, Engelmann and Novak, that climate influences but little the appearance of menstruation, and that internal secretions, food, habits of life and racial stock probably play a considerable part.

### 3. RACIAL INFLUENCES

Alexander von Humboldt and Robertson were among the protagonists of the ethnical factor as determining the onset of menstruation, and they sought to disentangle ethnical or racial stock from nationality. Tilt and other observers, such as Polak, also attached significance to race, but without citing detailed data. As



examples of early menstruation in races now living in a much colder climate than their original home, Polak mentions the Jewesses in Europe and the negresses in Persia and the United States.

Oppenheim, who studied Bulgarian, Turkish, Armenian and Jewish cases, believed race influenced menstruation; and Lebrun (according to Corre (p. 41)) found that out of 100 girls of either Hebrew or Slavonic origin, several Jewesses had begun to menstruate when they were 13 years old, but only one of the Slavs.

Weber's Russian results, already referred to, are worth quotation. He termed "early" onset of menstruation a date in the fifteenth year and "later" in the seventeenth, with these results:

	Russian.	Jewish.	German.	Polish.	Finnish.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Early . . .	48.5	54.5	47.1	52.7	19
Late . . .	6.36	3.7	2.9	2.9	19.25

Then he tabulated the premature and delayed cases; the premature being taken from 12 and the delayed after 18, thus:

	Russian.	Jewish.	German.	Polish.	Finnish.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Premature . . .	10.6	12.5	8.2	11.7	2.75
Delayed . . .	2.86	1.2	3.8	2.9	0

There are some interesting points here: *e.g.*, on the whole, the Finnish girls menstruate late, but extreme retardation is very rare among them, and extreme prematurity also, although less pronounced (*cf.* also for Finland, Heinricius and Malmio).

The Jewesses and Slavs, on the other hand, show marked divergencies, and tend to premature menstruation.

Enquiry among various races of the old Hungarian kingdom showed differences varying between 17 and 13, the Jewesses being not generally the earliest. In Strassburg, Stöber and Tourdes recorded details of 29 Jewish girls whose average age for the first menstruation was no earlier than that of other women examined. There was no case younger than 12, and generally the ages were between 14 and 17. Twenty-nine individuals, however, are insufficient material, both statistically and biologically, for any decisive results.

While giving consideration to climate and racial stock in determining the onset of menstruation, we should bear in mind that early menstruation is not an invariable result of life in the tropics. Reche made very striking records on the Melanesian island of Matupi, where a Catholic Mission had kept careful birth registers for over 20 years, thus making it possible to ascertain, as nearly as possible, the exact age of the girls. It was found that here, and the adjacent portions of New Britain, the women menstruated, on an average, at 17 years of age, *i.e.*, some years after the European average.



We shall now consider other minor factors in precipitating or retarding this function.

#### 4. THE INFLUENCE OF SOCIAL CLASS AND HABITS OF LIFE ON THE APPEARANCE OF MENSTRUATION

Social class and urban or rural environment may be considered to have some influence on the onset of menstruation, as was shown by Bensenger's minute study of 5611 women who had lived for 10 years in Moscow. He distinguished three time groups; the first began to menstruate between nine and 12 years of age; the second between 13 and 16, and the third between 17 and 22. Social class and profession of parents were carefully noted. It was found that in Moscow the majority of the first (early) group were either foreigners (no particulars of nationality are given) or members of the nobility. In the second group the majority were of mercantile class or daughters of the Russian clergy; and the third were mostly of the peasant class. No doubt food, rest and manner of life generally, as well as the accumulated effect of physical environment on the nervous system all interacted in these cases.

Stratz<sup>7</sup> collected particulars of the first menstrual date of 150 healthy girls, the offspring of healthy "normal" parents. He grouped these 150 individuals into three classes of 50 members each according to the social position of their parents. The average age of menstrual onset in the first group was 12·9 years; in the second 14·1 years; and in the third 16·4 years, correlating definitely with favourable (early onset) or difficult material conditions (later onset). This material was supplemented and its value greatly increased by definite facts about the later development of these girls. All of them attained to healthy and normally vigorous womanhood, and those of each group who had menstruated earliest were the tallest in stature.

Weber's Russian researches also showed that class and occupation were important, but his material was somewhat inadequate for any conclusive results. He found, however, that domestic life and sheltered childhood at home favoured early development; and proletarian life, with hunger and over-strain, retarded it. He also found that menstruation tended to appear at exceptionally early ages in girls who later showed a marked inclination for study and intellectual professions, and also among teachers, singers and actresses.

Brierre de Boismont published results of his enquiry in Paris, which showed the same tendencies. The average age for all his classes was 15 years and 4 months.

Women of the middle class menstruated at an average									
age of . . . . .	.	.	.	.	.	.	.	15 years	2 months
Manual workers . . . . .	.	.	.	.	.	.	.	15	„ 10 „
Servants . . . . .	.	.	.	.	.	.	.	16	„ 2 „
Industrial wage earners . . . . .	.	.	.	.	.	.	.	16	„ 1½ „

Szukits found the average age in Vienna to be 15 years 8½ months, and in the country districts of Austria 16 years 2½ months. In Strassburg and the surrounding district Stöber and Tourdes found an urban average of 13 and many cases at 12 or even 11, whereas the country girls had an average of between 15 and 16, and many later instances.

As early as the seventeenth century (1610), the physician Guarinonius, who lived in Hall, near Innsbruck, made a similar observation and attributed it to the richer, daintier and "more heating" food which the wealthier families could afford.



Amongst medical Talmudists Wunderbar has noted the opinion that living conditions have a marked influence over the onset of menstruation. Rabbi Simon ben Gabiel asserted that girls who dwelt in towns and had the opportunity often to visit the baths showed that they had both pubic and axillary hair at an earlier age than those who lived in the country districts. On the other hand, it was said that the breasts of the country girls developed earlier than those of urban dwellers on account of the hard bodily work of the former class.

Marc d'Espine's comparative statistics also show urban priority, and the great cities and capitals seem to have a more pronounced influence in this way than the small towns.

Yamasaki quotes an interesting case which has more than one significant aspect :

" Among the Japanese prostitutes, whose menstrual history I was able to study, there were two women who were twin sisters and grew up under exactly similar conditions. They entered the same elementary school on the same day, left it on the same day, did the same work in their home, which was also a confectioner's and baker's shop, and then both became inmates of the same brothel on the same day and the menstrual period began in both on the same date. Moreover, since then, their menstrual periods have almost synchronised."

Schaeffer has recently collected further extensive material. This does not wholly confirm the rule of absolute urban priority, for 606 girls, born and brought up to maturity in the country, menstruated on an average at 15.675 years, but 155 girls, born in the country, but brought to towns before puberty was completed menstruated at 16.326 years, *i.e.*, some months later.

The explanation, as Schaeffer himself indicates, may be that psychic and neutral influences, associated with the excitements and occupations of work in a town, had retarded bodily development in this direction.

[Some recent inquiries by Lintz and Markow suggest that environmental conditions have little to do with the onset of menstruation. The histories of 800 women were investigated, comprising various social, economic and racial strata. The authors came to the conclusion that " heredity plays a very important rôle " and that " the incretory organs are the underlying factors in the determination of puberty."

Of the 800 cases 62 per cent. began to menstruate at from 12 to 14 ; 35 per cent. from 15 to 18 ; and 3 per cent. after 18 years of age. On the farms and in very small towns the average age was about 13½. In the medium-sized towns it was again 13½, and in the large cities the average was 14. This estimate roughly corresponds to Curjel's figure of 13.63 for 489 Indian women of many castes and races.]

## 5. INFLUENCE OF EARLY SEXUAL EXPERIENCE ON THE APPEARANCE OF MENSTRUATION

Early sexual experiences are closely related with those environmental conditions which appear to influence the early or late appearance of menstruation. Many important facts seem, indeed, to suggest that such sexual activity has a marked effect. Thus among Esthonian peasants, in spite of severe climatic conditions and a plain and poor diet, as well as a generally somewhat torpid and phlegmatic constitutional type, menstruation often begins at 15 or even 14. Holst attributes this to early sexual experiences leading to local congestions.



Jacobs<sup>2</sup> found that in Achin it was believed that menstruation occurred earlier in married girls than in single.

In Hawaii also the native girls are generally given in marriage before puberty, and menstruation in an unmarried girl is considered, according to Dumas, a sign of secret affairs.

As regards Europe, we have some statistical material from both Italy and Russia dealing with the professional prostitutes who, as is well known, often begin their way of life when still almost children.

Lombroso found premature menstruation in 16 per cent. of his Italian cases and retarded menstruation in 9 per cent. He quotes De Albertis as finding that 28 prostitutes had had the first menstruation at the average age, but a few individuals were very early, whilst others were remarkably late. Similarly, he states that Grimaldi studied 26 cases of professional prostitutes. In 6 he ascertained that the first period occurred between 11 and 12 years of age.

The most detailed material here was collected and communicated by Pauline Tarnowsky. She studied 150 prostitutes in Leningrad (St. Petersburg), some of whom were country girls from the rural areas near the capital. Of these, 45·99 per cent. had their first period between 11 and 15; while of an equal number of normal peasant girls of the same district, only 10 per cent. were so precocious. Thus we have here a very marked positive result, and Mme. Tarnowsky took pains to verify the facts. She says:

“Thus it follows that 32 of these girls had had sexual intercourse before the age of 15, and 33 others from the age of 15. Sixty-five girls out of 150 had abandoned themselves to sexual relations before the age of 16, which our laws fix as the minimum age for legal marriage. The illiterate peasant women with whom they were compared and who were mostly the married mothers of families had had no sexual relations before the average age of 18.”

Twelve of these prostitutes had begun sexual intercourse at 13, four at 12, 1 at 10, and 1 at nine years of age.

This precocity was not, however, invariable. There were cases of an abnormally late appearance of menstruation. Tarnowsky says, “The menstrual period did not begin till 19 years of age among 2 per cent. of our prostitutes,” and it is clear that we cannot prove that there was no previous sexual activity in those cases. Tarnowsky's list has instances of comparatively late introduction to the life of prostitution: 26 began at 17, 12 at 18, 9 at 19 and 2 at 21.

Many factors operate here, and it is extremely hard to come to any conclusion or obtain reliable data. Chervin declared that the girls of Hindustan do not, by any means, menstruate earlier than Europeans resident in the same climatic conditions; the age is normally 12, as it is for other Oriental races. Yet Hindu girls marry much sooner than most Asiatics; the laws of *Manu* decree eight years as the age for marriage in girls, and they must, in any case, be married before their first menstrual period.

Amongst the Nayar in southern India sexual maturity is reported by Jagor to be attained between the thirteenth and fifteenth year and only exceptionally before the twelfth. Speerschneider, who lived in Travancore, knew girls of some of the badly nourished peoples of southern India who were not mature at 16 and whose breasts had not developed. Many Nayar girls are already living with men from the age of 11 upwards.

It is thus impossible to arrive at any final estimate with the material at present available.



## 6. FURTHER INFLUENCES ON THE APPEARANCE OF MENSTRUATION

We have already said that, apart from climate, other factors have been considered important in influencing the onset of the first menstrual period. Among these are race, nationality, ways of life, occupation, education, food, housing, clothing, morals and customs generally. Robertson, many years ago, noted that American Indians menstruated early and that negresses were often late although living under the same warm climatic conditions. He tried to explain this fact by assuming that the Indians had earlier sexual experience than the negresses, the former being often, it was alleged, mothers as early as the tenth year. Lapepède also asserted that, under similar conditions of latitude and climate, negresses and girls of Mongol stock menstruated earlier than Europeans.

It may perhaps be necessary to look beyond these various factors for the decisive influences determining the appearance of menstruation. For example, we must not lose sight of such factors as may be produced by heredity and by constitution. Thus H. N. and M. R. Gould, in a study of the relation between first menstruation in mothers and daughters, found that the age of the mother at first menses has a demonstrable effect on the appearance in the daughters. Moreover, the ages of *propositæ* at the first menses correlated with those of their sisters.

Among Europeans it is an established fact that girls occasionally have their first menstrual period at just the same age as their mother and grandmother, and that this hereditary factor is even apparent in the duration and amount of the monthly loss (*cf.* Hoover and Marden). The particular group of individual qualities which we term *temperament* should certainly be given more weight than is usually supposed.

Kretschmer maintains that physical structure and appearance are closely interwoven with individual temperament and that the determinant which correlates them is the balance of the endocrines and hormones. We have already seen that the removal of certain endocrine glands at an early age causes both mental and physical deficiencies. Thyroid deficiency at an early age produces temperamental apathy and physical dwarfism of the type known as cretinism, and in female cretins there is generally no menstrual function. Removal of the gonads produces suppression of the genital instinct and structural eunuchoidism, excessive length of limb and lack of hair.

We may, according to Kretschmer, seek in the complex maze of individual psychology the extremes of the two principal psychoses. Manic-depressive insanity (or circular) is the morbid exaggeration of the type which, in normal psychophysiology is termed *cyclothymic*; and the schizophrenic psychoses are the exaggerations of the *schizothymic* temperament. The physique appropriate to the cyclothyme is the pyknic; to the schizothyme the athletic and asthenic (*cf.* Paulsen).

We have already referred to these individual differences in constitutional type and would refer students to the great encyclopædia of Halban and Seitz, "Biologie und Pathologie des Weibes," and especially to Mathes' study of female constitutional variations therein, with particular emphasis on what he says about "intersexual" or "intermediate" types.

Mathes emphasises the view that these endocrine blends, which manifest in individual constitution, are the essence of individuality and are probably determined at the merging of the parental gametes in fertilisation. Wiedersheim, in his work, "Der Bau des Menschen," showed that the general human type is undergoing modifications, developing some organs and regions and discarding others. He



speaks of regressive and progressive features, and Mathes of "youth forms" and "future forms." Such examples are cited as the forehead, the projecting nose and the chin, which are all claimed as distinctly human characteristics. A short nose, low brow and shallow chin are considered, therefore, indicative of the "youth form" or immature type when found together in the same person. On the whole, the immature facial outlines seem to be more frequent in women than in men.

Sigaud and his pupils, Chaillou and MacAuliffe, have differentiated the following main types :

- (1) *Typus Respiratorius* (the "future" type of Mathes).

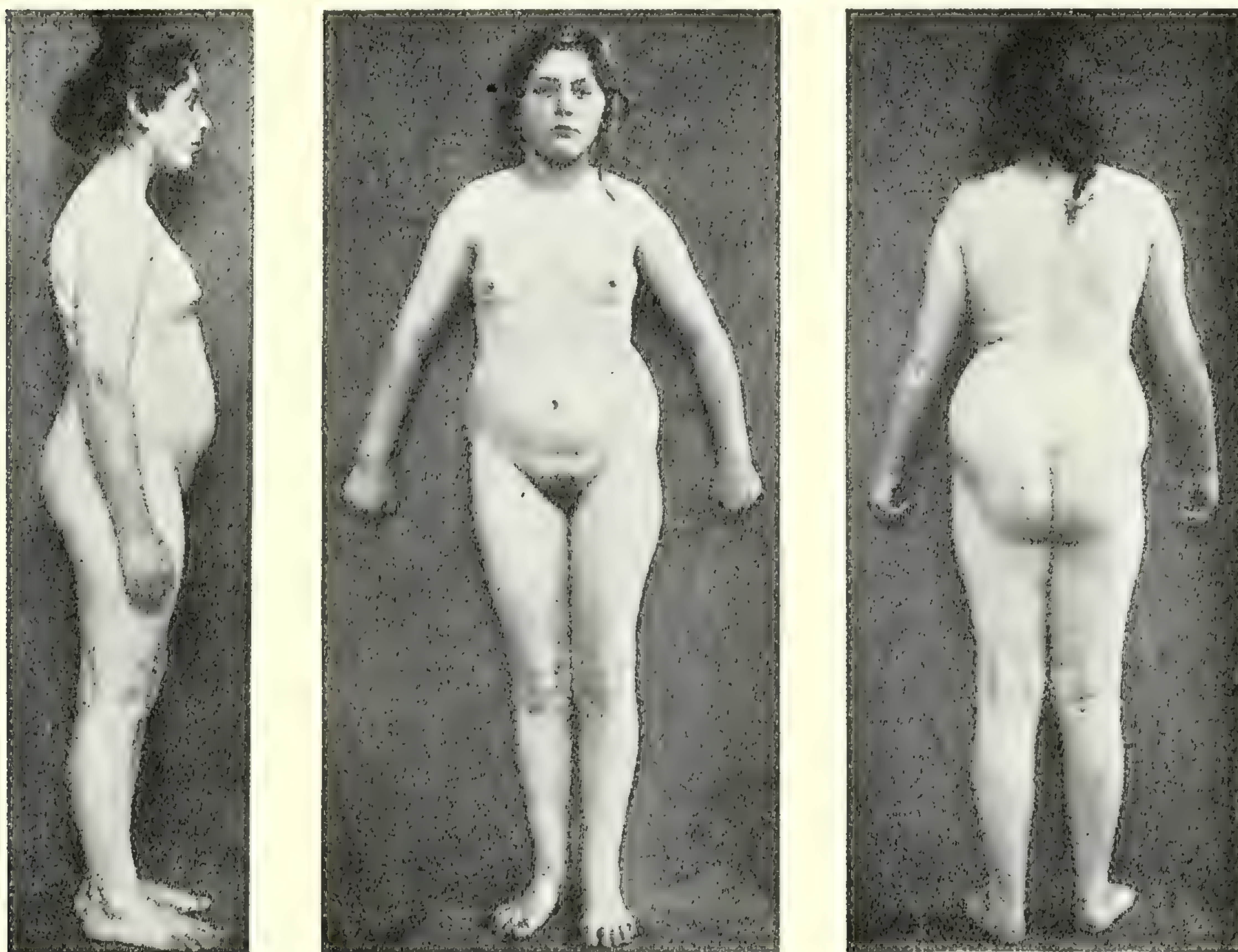


FIG. 426.—Dutch girl (12 years) of "hyperplastic" type. (After Mathes.)

- (2) *Typus Digestivus* (showing a certain degree of arrested sexual differentiations ; intermediate).

- (3) *Typus Muscularis* (a certain resemblance to the "youth" type of Mathes ; well-defined sexual characteristics).

- (4) *Typus Cerebralis*. (Hypoplastic.)

Kretschmer has two main categories :

- (1) *Pyknic* (well-defined sex characters with resemblance to the "youth form").

- (2) *Schizoid* (increase of sensitiveness or irritability. A certain degree of asthenia and intersexuality).

Mathes distinguishes seven categories as follows :

- (1) *The Future Type*. This is in accordance with humanity's gradual adjustment to the erect posture ; the emancipation of the hands and the preponderance of the cerebrum (and cerebral cortex or neo-pallium) over the diencephalon. The



tissues become denser and less moist, and the outer integument drier and more brittle. The processes of volition and cognition become more sustained, intricate and intense.

(2) The plump "youth" form corresponding to Kretschmer's pyknic type.



FIG. 427.—Intersexual type. (After Mathes.)

The central photograph shows an individual of 30 years. Status asthenico-ptoticus. Normal size; skin pale, withered and inelastic; sparse pubic hair and axillary hair lacking, whilst the legs below the knee show no hair; clitoris 2 cm. long, with pointed shaft, glans the size of a bean with prepuce, together with clearly marked raphe along the under surface. The photographs on either side show the same individual after operation. Note changed bodily contours and expression. All homosexual inclinations have disappeared and normal coitus is practised with full satisfaction.

The brow is low, the chin level but not prominent, the nose short and not prominent. The skin is soft, elastic and glabrous. On the whole, the representatives of this group are adequate to the usual demands of life.

(3) The Status hypoplasticus. This is, in contrast to the preceding group (2) in being, to some measure, abnormal and no longer equal to strictly average standards and requirements (infantilism, abiotrophy, malnutrition)



(4) Status Hyperplasticus and Dysplasticus. Instead of arrested growth there is excess, either in size or in the texture of certain tissues, etc., and there is a disharmony of the whole organism, for while some organs are over-developed, others are the reverse (*cf.* Fig. 426).

(5) Status asthenico-ptoticus. This implies a dropping or displacement of certain muscles and organs owing to weakness and lack of tone, a condition early recognised by Hippocrates. Some consider the condition acquired rather than congenital, but the tendency seems congenital, *i.e.*, constitutional.

(6) Sexual hypoplasia and the reverse. We have pointed out that certain chromosomes determine sex. It has been suggested that through some disturbance or lack of development these may affect later growth and function.

(7) Defective Sexual Differentiation or Intersexuality (*cf.* Goldschmidt). If menstruation occurs much later than usual, the person whose functions are thus retarded is apt to be of childish type or even to present all the features of childish physique on a larger (adult) scale. This type of retardation has been studied in Tyrol, where it is quite common. In the maternity hospital at Innsbruck, the following dates were obtained as showing the first menstruation of 200 women who were maternity cases :

Age . . . . .	12	13	14	15	16	17	18	19	20
Number of cases .	3	8	29	38	48	36	19	8	11

Finally, health or "fitness" is also and obviously a very important factor. Lullies, of Königsberg University, made careful inquiry into the menstrual history of 3000 women. He found that the most frequent age for the onset of menstruation was 16 years, and even later in cases of illness and among those living in the country : he found that tall girls began earlier than short, and short earlier than those of medium height ; and that the weak began before the robust. In view of the connection between constitutional type and colouring of hair, eyes and skin, it is interesting to note that Lullies found that blondes menstruated, as a rule, earlier than brunettes ; and thus tall, fair-haired and fair-skinned girls of somewhat frail physique menstruated earliest, and small, dark, sturdily built girls latest. Others, however, are of the opinion that red-haired or auburn-haired girls constitute a special group, and that the order of menstrual onset is, as a rule, in point of time : (1) the black-haired or very dark type ; (2) the red-haired and (3) the fair-haired or real blondes.

We are not yet able to judge the influence of the seasons on menstrual inception. Dr. George MacDiarmid declared that the Eskimo women only menstruated during the summer months and thus attributed a suppressive effect to the Polar cold, during part of the year. Krieger, however, has made it quite clear that the warmth of summer and spring do not usually bring on menstruation in European women. Many more than half the number of cases he studied and recorded had menstruated for the first time in the months of September, October or November.

## 7. THE AGE FOR THE FIRST MENSTRUATION IN EUROPE

We shall now rapidly survey the main data as to the age at which menstruation begins in different races and climates.



As regards the Mediterranean peoples of Europe : 14 has been given as the average age for girls of Corfu ; Mrazovič gave between 14 and 15 for Bosnia, and Virey 12 for Italy and Spain, whereas Engelmann <sup>4</sup> found the average for Italy was 14.8 and for Spain 18.2. In Ancient Rome, the traditional nubile age for girls was 12, but the medico-legal writer Zacchia, who practised in Rome, declared that hardly one in a dozen was menstruating at that age and many not till after 14, although he knew of cases where it had occurred as early as nine (Lib. 1, tit. 1, quæst. vi., 34, p. 11).

We have also further details from Italy, divided regionally into a northern, central and southern group and including 2652 cases. In the two first and largest number of cases menstruation occurred at 14 (20.10 per cent. and 19.50 per cent.) in the southern group at 13 (16.75 per cent.), where there is a considerable percentage of very late cases, *i.e.*, at between 15 and 20 years of age. Before 16, we find a larger number of menstrual inceptions in the central region than in the southern.

[Rossi Doria, who, in 1908, published the results of his own inquiries in Rome, and who gives comparative tables from a great number of authors, gives 14 years 3 months as the average age in Italy based on 36,000 cases. He notes a difference between the time of the appearance of menstruation and pelvic development.\* In women who menstruate very early or late the number and degree of pelvic anomalies are larger than in those who menstruate at the normal time. In the comparative table he shows that the average age of the onset of menstruation from available figures ranges from 10 (Rio de Janeiro, but number of cases not given) † to 18 (Lapland, with again the number not stated). Of the largest number of cases the United States (19,405) gives an average of 13.9 ; Rome (31,659) gives 14.3 ; Warsaw (15,083) gives 15.1 ; Budapest (9600) gives 15.4.10 ‡ ; Prussia (10,500) gives 15.8.23 ; Russia (10,000) gives 15.9.6 ; Bavaria (10,522) gives 15.11.25 and Leningrad (St. Petersburg : Rodsewitch) with 12,439 cases gives 16.1.16.]

Cleghorn says of Minorca that menstruation begins, as a rule, before 14 and sometimes at 11, whilst Macias de Torres has dealt with Asturias.

We shall include the figures for Madeira although its European affinities are doubtful. Ross, who lived there for some time, collected 240 cases of indigenous girls. He found the mean age to be 14 years 8 months. Dyster had somewhat different results : he studied 228 cases, in 67 of which 16 was the age, the average being 15 years 5½ months.

We have already mentioned the French figures. Brierre de Boismont has published a work based on 1111 cases. In 1 case, menstruation began at six years old, in 1 at eight, in 10 at 10, in 29 at 11, in 93 at 12 ; 190 girls, or 17.1 per cent. of the total cases, menstruated at 16, and even so late as 18 there were as many as 127 cases. Brierre de Boismont obtained a mean average for Paris of 14 years 6 months 4 days, but Aran, on his own material, calculated 15 years 4 months 8 days.

With regard to the figures for various French towns it may be said that paucity of material makes the estimates of little value. Pétrequin gave for Lyons (432 cases) 15 years 6 months as the average age, a result on which Krieger casts some doubt in view of Bouchacourt's estimate of 14 years 5 months and 29 days. For Marseilles and Toulon the latter observer gave 13 years 10 months ; and M. d'Espine

\* [Cf. W. Lorenz : Tranquilli-Leali.]

† [For later observations see Napoleão.]

‡ 15 years, 4 months, 10 days, etc.



for Marseilles gave 13 years 11 months 11 days ; for Toulon 14 years 4 months 29 days ; and for Paris 14 years 11 months 20 days. It must be pointed out, however, that Bouchacourt's total cases amounted only to 160, whilst d'Espine used 24 cases for Marseilles and 43 for Toulon.

There have also been investigations and correlations of material for various German and Dutch (see Bolk) localities. Krieger used 5500 Berlin cases, Louis Mayer 6000. They found 15 the most frequent age, 14 the next in frequency. In the remaining cases, the years later than 15 appeared much more often than the earlier. The majority of these cases were obtained from private practice ; Siegmund Marcuse's 3000 cases were from the gynæcological wards of hospitals in Berlin and, therefore, from the poorer and less prosperous classes. The majority of Marcuse's cases began to menstruate at 16-18 years of age.

Metzger's material from the Rhineland (Bonn) was also from hospital wards. It included 4113 cases. The most frequent age was 15 (793 cases) ; then 14 (715) and 16 (710). The earliest age was eight (1 case), the latest 25 (also 1 case only).

Hecker studied Munich data from general and maternity hospitals and also classed his urban and rural cases separately. The rural cases were nearly all from Upper Bavaria, *i.e.*, from the immediate neighbourhood of Munich. He found that in both groups menstruation tended to begin "rather late." The most frequent ages were 16 (16.92 per cent.), first of all ; then 17 (16.44 per cent.), then 18 (15.61 per cent.). Fifteen (15.32 per cent.) was a less frequent age than 18, whilst 19 showed 10.37 per cent. and 20 7.51 per cent.

Schlichting studied 8881 cases from the general hospital in Munich and found 16 the most frequent year, confirming Hecker's results. The comparison, however, with the Berlin figures is not without interest.

It appears that in the rural parts of Bavaria menstruation is apt to be late. In the Frankenwald mountains Flügel reckoned the average age for the menarche at 17 years 5½ months.

In Strasbourg observations of 600 women in the maternity hospital indicated that the average age was 14 to 18 for the menarche, 18 being the maximum. In a tobacco factory among 649 women 15 (20 per cent.) was the average age, followed by 14 (19.63 per cent.) and 16 (19.17 per cent.). Eighteen was the age only in 10.78 per cent.

Szukits found a very late menstrual average for Vienna. He studied 665 women born in that city. Three hundred and three began to menstruate after 16 ; only 152 before that age, 210 at 16. Among 1610 women from the rural districts of Austria, 888 menstruated later than 16 and only 304 earlier.

The British data, based on considerable material, also indicate a late menarche, but any statistical averages would be very misleading. Guy studied 1500 Londoners, amongst whom the largest number of cases occurred at 15 (19.4 per cent.), 14 (17.73 per cent.) and 16 (15.60 per cent.). Tilt found an average of 15.06 years for his 1551 cases. Walter Rigden found in his 2696 London cases an average of 14.96 years. In 4000 Manchester cases the average was 15 years 6 months 23 days. Robertson's Manchester cases were inadequate in number and his further English data omitted to mention any towns, counties or localities.

Ravn and Levy found the average for their 3840 Danish cases from Copenhagen to be 16 years 9 months 12 days ; and 157 cases from Oslo produced a very similar result, being only 13 days later than for Copenhagen.

H. Vogt's average for 1821 Norwegian girls was 16.12 years ; whilst 16.6 years was the average in 548 Swedish cases from Stockholm ; and in 100 cases from Skien



15 years 5 months 14 days. Wretholm, quoted by Raciborski, gives the average for Swedish Lapland as late as 18, Vogt 15·2 years for the Finnish Quenas. Berg found 16·13 years the average for 122 cases from the Faroe Islands. Heinricius studied 3500 cases from the obstetric wards at Helsingfors. He found an average at 15 years 9 months 27 days. In the year 1906, E. Essen-Möller<sup>2</sup> published a comprehensive series of statistics based on 5000 cases on the menarche in Sweden. The first menstruation occurred in this manner :

Age.	Number of Cases.	Percentages of Total.
10	4	0·08
11	37	0·74
12	222	4·44
13	465	9·30
14	1055	21·10
15	1319	26·38
16	830	16·60
17	499	9·98
18	324	6·48
19	140	2·80
20	84	1·68
21	13	0·26
22	5	0·10
23	3	0·06

We have cited some of the results obtained from Leningrad especially dealt with in publications by Tarnowsky and Weber.<sup>3</sup> The last named inquired of 2375 women among his private patients. Ten of them began to menstruate at 10 years (0·4 per cent.), 70 at 11 (3·0 per cent.) ; 171 at 12 (7·2 per cent.) ; 415 at 13 (17·5 per cent.) ; 556 at 14 (23·4 per cent.) ; 453 at 15 (19 per cent.) ; 348 at 16 (14·6 per cent.), 200 at 17 (8·4 per cent.) ; 77 at 18 (3·1 per cent.) ; 40 at 19 (1·7 per cent.) ; 16 at 20 (0·75 per cent.), 8 at 21 (0·37 per cent.) ; 5 at 22 (0·2 per cent.) ; and 2 at 24 (0·07 per cent.). Various morbid conditions may have accelerated or retarded menstruation in these cases, but the most frequent age was 14½. Other results indicate a later age, an average of 15·6 years being estimated. Tarnowsky's figures were based on 5000 patients of a maternity home and gave an average of 16·54 years, whilst among the pupils of the Alexander Institute, who were well-to-do girls, the average of 14·75 years was found.

Weissenberg<sup>4</sup> gave 14 years 2 months as the average date for Jewesses in Southern Russia, and 14 years 10 months for Russian girls.\*

## 8. THE AGE FOR THE FIRST MENSTRUATION IN ASIA

According to Tobler, the usual age for female puberty in Palestine is 13 years ; it sometimes occurs at 12 or even earlier. Rigler gives for Smyrna ages from 11 to 12 ; whilst 10 has been given as the normal age in Turkey, the same as Niebuhr maintained was the case among Arab girls generally.

In Persia, there appear to be marked regional differences. Häntzsche states that the girls of the province of Gilan by the shores of the Caspian Sea become

\* [For more recent results see M. Stein.]



mature at 14. Polak found 13 more usual in Northern Persia ; and Chardin between nine and 10 years of age in southern Persia.

The Armenian statistics have been collected by Minassian. He studied 600 cases ; 260 ( $43\frac{1}{3}$  per cent.) menstruated for the first time in their thirteenth year, 146 ( $24\frac{1}{2}$  per cent.) in their fourteenth, 84 (14 per cent.) in their twelfth, 42 (7 per cent.) in their eleventh. But 25 (6 per cent.) delayed full puberty till 15, and the same number till a year later—16. Eight ( $1\frac{1}{3}$  per cent.) matured as early as 10 years of age ; 5 (0·8 per cent.) as late as 17, and 5 at 18, the latest age cited.

Roberton seems to have been the first to publish studies of Hindu material in this field using modern methods. The average age in 90 cases from Calcutta was 12 years 4 months. In Bangalore, a town of Mysore, 10 degrees nearer the Equator than Calcutta, a correspondent informed Roberton that the mean age was later—13 years 2 months. In Deccan in the Bombay Presidency, 13 years 3 months was the average in 301 cases. Two hundred and thirty-nine cases from Calcutta gave an average of  $12\frac{1}{2}$  years. According to Allan Webb, the Hindu girls seldom menstruate before 12 years of age. Only 6 cases out of 127 were more precocious, but, at the other extreme, he found menstruation “often” began between the ages of 16 and 18. In fact, he believed that the physiological rate of development in Hindu women is no more rapid than in Europe and accelerated neither by diet nor climate. In 1910 Leicester gave some comparative data for women of different stocks living in India, and in the *Report of the Age of Consent Committee in India*, published in 1929 a table is printed (p. 337) regarding the age of first menstruation in India. It illustrates the ages in different races living in India.

Race.	10-11.	11-12.	12-13.	13-14	14-15.	15-16.	16-17.	17-18.	18-19.
	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
European, 174 . . .	2·7	6·1	13·4	23·4	21·2	16·7	8·3	6·1	1·6
European, country-born, 387	0·7	3·6	10·8	25·8	24·8	17·3	12·4	3·1	1·2
Eurasians, 795 . . .	0·7	0·2	22·0	31·8	22·0	10·5	4·2	1·7	0·6
Natives, 1752 . . .	2·0	10·4	36·4	29·3	13·9	4·5	2·2	0·2	0·04
Jewesses, 73 . . .	—	2·7	9·5	34·2	34·2	17·8	1·3	1·3	—
Chinese, 8 . . .	—	—	12·0	62·5	12·5	—	12·5	—	—

Schmarda gives 13 to 14 as the date for the Singhalese girls of Ceylon ; and Jacobs <sup>2</sup> 12 or 13 for those of Achin in Sumatra. According to Engelmann,<sup>4</sup> the age 14·6 was found the average for 168 Javanese by van der Burg.

Campbell's figures for Siam suggest a relatively late average between 14 and 18, “hardly ever” before 12 years 5 months. Out of 30 girls, whose menstrual age was established, 16 menstruated after their fifteenth year had been completed.

In Cochin-China, Mondière found a very late average among the 980 Annamese women he studied. The mean age was 16 years 8 months. The most frequent ages were 15, 16 and 17 with 23·48 per cent., 22·93 per cent., and 23·26 per cent. of the total respectively. The other races of the four inhabiting Cochin-China, according to the same authority are even later. The Chinese girl averages 16 years 6 months ; the half-breed Ming-huong 16 years 8 months ; and the Cambodian 16 years 10 months.

Both Wernich and a Russian medical man who practised in Japan give 14 and sometimes 13 as the usual age. Very late menstruation is seen less often than very early but, even so, menstruation before 12 years of age is extremely rare. Wernich found that very retarded menstrual cases (in whom the periods were often repressed



till 18 years old) were not sickly or tuberculous but decidedly infantile, mentally as well as physically. Moreover, they remained flat and angular in their bodily contours, whereas the normally developed Japanese girl expands very much and becomes noticeably wider in hips and bosom.

On the suggestion of Surgeon General T. Ishigurn, Moriyasu and his colleagues tabulated the first menstrual dates of 584 women in Tokio : 2 menstruated first at 11 years, 2 at 12, 26 at 13, 78 at 14, 224 at 15, 228 at 16, 68 at 17, 44 at 18, 10 at 19 and 2 at 20.

Yamasaki does not mention these figures, but quotes 12 further sets of statistics of which his own contains 4861 cases and in these he finds the average to be 14 years 10 months.

Hureau de Villeneuve was of the opinion that the average age for Chinese and Mongolians was between 12 and 13. Morache concurs, regarding the Chinese girls of Peking ; but Scherzer gives a later age, between 15 and 16.

The most frequent age among the Kirghiz of the Steppes is said to be 15, then 14, then 16. Vasiliev made observations in 236 cases and found the average for the menarche 15 years 1 month 6 days, the average duration of each period being between three and four days.

## 9. THE AGE FOR THE FIRST MENSTRUATION IN AFRICA, OCEANIA AND AMONG THE AMERICAN INDIANS

There are great difficulties in obtaining precise statements among savage peoples or indeed any appreciable number of indications : moreover, some primitive tribes take no account of age but, when menstruation begins, there are ceremonies of an elaborate and public kind. We may summarise here a few of the observations that have been reported.

Robertson ascribes a fairly normal age of maturity to Negresses : he states it is between 13 and 17 with an average at 15, but he also knows of cases where menstruation began at 11. Trémeau de Rochebrune had reasons to believe that the Wolof in Senegal usually menstruated between 11 and 12. The same was reported by Daniell<sup>2</sup> for the Bay of Biafra ; and Pruner gave the years between 10 and 13 for Negresses in Egypt ; whilst Rigler thought that these began from their ninth or tenth year. Narbeshuber gave between 10 and 12 for the Bogo, but Münzinger gave the later age of 16. The Swahili of Zanzibar are supposed to mature between 12 and 13, and the Wahyamwezi (according to Reichard) between 10 and 13. According to Hartmann, the Barabra menstruate later than the Egyptians, *i.e.*, between 15 and 19 ; and the Somali not before 16 according to Hartmann and Haggemacher.

[Mrs. Elgood studied 275 cases of Egyptian girls attending a native boarding school in Cairo. The ages of the children were six to 16. Eight began to menstruate at 12 and some did not begin till 16 or later. In three schools it was found that in 295 cases between six and 11 no menstruation was reported ; and in 143 cases between 12 and 18, 81 had menstruated and 62 had not.]

These data, entirely approximate as they are, yet show enough diversity to indicate the wide range of constitutions and conditions among African peoples. Any adequate statistics can only be obtained in the future, if even then it be possible. Falkenstein<sup>1</sup> has very wisely suggested that it is erroneous to assume a very early nubility in all tropical or equatorial climes and that individual constitution must be reckoned with in all circumstances.

Nachtigal entirely concurs. During his years of medical practice at Fezzan, he



found just as many girls who menstruated after 15 as those who began before 12. Bertherand, however, mentioned nine to 10 as usual for Arab girls in Algeria. Meek gives no figures for the Jukun-speaking peoples of Nigeria, neither does Earthy for Valenge women.

The missionary Kempe, who worked among the Australian blacks in Finke Creek, says that menstruation sometimes begins among them as early as eight years old and never later than 12.

Bourgarel gave 12 for New Caledonia, but Vinson and Victor de Rochas a later age, up to 13 and 15 respectively, whilst in Fiji 14 has been reported. Blyth, speaking of the same group of islands, says that 10 years is the average, but that delayed menstruation is not uncommon among natives who have otherwise reached puberty. The same uncertainty is shown in accounts of puberty among the New Zealand Maoris. Some give the menstrual age as 12, others from 13 to 16, and Goldie discusses cases as early as 10. The Moriori are said to reach puberty between 13 and 16. Graeffe gives 12-13 as the age for the full-blooded Samoan with early exceptions at 10, whilst Mead gives no figures for Samoa or New Guinea. Elton gives 15 for the Solomon Islands. In the New Hebrides, especially on Vaté, 13 years is the rule according to the Rev. D. Macdonald, quoted by Jamieson (p. 52).

We have already cited the remarkably late menstrual average on the Melanesian Island of Matupi (which is confirmed, according to Reche, by the careful baptismal registers of the Roman Catholic mission) at 17. This is exceptional, but it is based on what is believed to be exact data, whereas the other estimates are largely conjectural. Further confirmation would be very useful.

Epp gives 14 as the rule for the East Indian Archipelago, with late exceptions between 16 and 18. Riedel,<sup>6</sup> however, says generally before 10 on the Aru Islands, and between 9 and 11 on the Amboina group, Tenimber and Timor Laut, as well as on the Babar group; while the Ceram Laut and Gorong groups have an even earlier average at nine. In the Sermata islands the onset of menstruation is reported as from 10 to 12, but, according to Modigliani, the Nias girls are later (15-16), while in Sumatra the average is 11-12.

Man gives interesting particulars about the Andamanese: they do not menstruate before 15 or become mothers before 16. They attain their full height and bodily proportions two or three years after menstruation begins.

Schadenberg (p. 136) gives 10 as the age for the Negritos of the Philippines; but Montano observes that accuracy is impossible here as the Negritos take no account of their age.

We have scattered information from all the climatic zones of South and North America.

The ages 11 or 12 have been given for the Araucanians of Chile. The Peruvian natives have very sparse menstruation and are much later, so it is asserted, than the other peoples, at least in the Cordilleras. The Creoles are said to be as early as nine years of age at menstruation.

Grandidier says 12 years is the rule for the Campa tribes along the Amazon; Mantegazza gives from 10 to 12 for the Indians of the Pampas; Rengger 11 for the Payagua of Paraguay, and Stedman 12 for the Indian girls in Surinam. [Mathé has dealt with Cuba.]

The Indians of Canada and the United States have great diversity in this respect. Busch ascribes to them a very late onset, rarely before 18 or even 20. Edwin James maintains that they begin to menstruate about 12 years of age. Keating learnt from a Potawatomi chief living near Lake Michigan that the usual



age for his tribe was 14 ; Parker gives from 14 to 16 for the Ojibway or Chippeway, and Comfort from 12 to 14 for the Dakota (Sioux), Algonquin and Navaho. Montezuma found 13 the age for the Paviotso and Shoshoni in Nebraska ; and Parker 12 for the Arizona Apaches, and 15 for the Mandan, Gros Ventres and Arikara. Wray's figure for the Yankton and Crow Creek tribes was 16 years. Marden found that 13 was usual among the Mescaleros of the Government's reservation in New Mexico. Keating ascribed the comparatively late onset among the Sioux to their colder climate and very hard life. Twelve to 13 has been given as the age for the Omaha. Robertson obtained some more precise particulars about 82 Indian women of whom :

1 menstruated in her eighth year.				
5	„	at	9	years old
9	„	„	10	„
16	„	„	11	„
27	„	„	12	„
9	„	„	13	„
8	„	„	14	„
7	„	„	15	„

And none at 16 or later.

These instructive data show that even among races so similar and so closely interbred throughout centuries as the North American aborigines, there is no general agreement for the onset of menstruation.

Currier investigated by means of a questionnaire to the various Indian Agencies and Reservations. At Fort Union (New Mexico) in 16 Apache women the age of menstrual onset was :

10 years in 3 cases				
11	„	1	„	
12	„	1	„	
13	„	4	„	
14	„	3	„	
15	„	3	„	
16	„	1	„	

In 9 Cheyenne cases, the results are much later :

At 15 in 1 case				
„	16	„	3	„
„	17	„	3	„
„	19	„	1	„
„	20	„	1	„

Forty-three women of the great Sioux tribe in the Santee, Fort Peck and Fort Niobrara Agencies of Montana and Nebraska had the following first menstrual dates :

At 13 in 1 case				
„	14	„	14	„
„	15	„	13	„
„	16	„	5	„
„	17	„	5	„
„	18	„	3	„
„	19	„	1	„
„	23	„	1	„



Thus, the recorded ages, even in this scanty material, range from 10 to 23.

[Holder has also compiled a few statistics relating to the menarche in American Indian girls. His observations were made at an agency school and seem to indicate that the onset of menstruation is earlier than that of white girls living in the same latitude, the average being 12.91 years. This figure is said to agree roughly with other calculations based on results obtained among Indians living in Government reservations.

Hrdlička<sup>1</sup> found that the Pima Indians menstruated earlier than the Apache and both earlier than white subjects in Boston. Data is, however, lacking which would provide a comparison between the Pima, the Apache and white subjects in Arizona.]

The Alaskan Indian girls attain puberty between 14 and 17. Lundberg gives information regarding the Eskimo of that territory. In the case of five girls of 14 or younger, menstruation had not occurred, but in 16 girls this had happened, and four had had their first catamenia at 14 and four at 15, three at 16, three at 17, and two after completing their twentieth year. The mean age is about 16. MacDiarmid, who accompanied John Ross's Polar Expedition, informs us that menstruation is often delayed till 23 years of age among the Eskimo, and is very slight during the summer months.

Von Haven gives an account of 100 Greenland Eskimos of whom 88 menstruated between 15 and 17. Only five were earlier and seven after 17. H. Schliephake, however, says of the Cumberland Sound Eskimo that sexual maturity is "early" *so far as can be judged* in a race where no one's age is certain, and seems to be about 13-14.

Engelmann<sup>4</sup> found an average menstrual onset at 12.6 years in 500 Indian girls of the Arctic circle, but between 13 and 15 in the Eskimos.

We have accounts of the puberty of the Fuegians by Hyades and Deniker, who found one 18-year-old girl who had not yet had her first period, and two of 11 years of age—both slightly tuberculous—who were already menstruating. Our authorities came to the conclusion that the Feugian girl generally menstruates later than the European.

## 10. PUBERTAS PRÆCOX

Guggisberg\* defines hypergenitalism as excessive function of the genital system arising invariably from abnormal activity of endocrine secretion. This endocrine activity may be primarily gonadal or, in view of the interplay of the endocrine system, it may be initiated by, for example, the pituitary. Hypergenitalism may manifest either in (a) very early onset, or in (b) excessive menstruation and organic development or in both directions.

The sanguine discharge from the vulva in small girls, even before the completion of their first year, has been classed wrongly as hypergenitalism, even if it has only been observed once. *Pubertas præcox* (known to Pliny, Seneca and the Greeks) implies much more than that.

By the year 1862, Kussmaul had established and recorded 32 cases. Then J. Lenz published his work in 1913 in which he enumerated 130 cases, the earliest of the year 1658.

Some of these cases, which were recorded by various observers, are worth noticing very briefly. Zeller records a case of menstruation at two months, and

\* In Halban and Seitz.



Comarmond one at three months. Another child, who was seen by A. van der Veer, was born in February, 1880, menstruated at four months and then regularly every 28 days, the flow lasting four to five days. This child was unusually well developed. It weighed 49 lb. and looked as if it were 10 or 11. The menses ceased from December, 1882, until February, 1883. No similar case occurred in the family. Cesarano reports a case at six months where the child suffered from rickets; and d'Outrepont mentions another who began at nine months. Dieffenbach records cases at nine, 11, 14 and 18 months; and Susewind one whose menses began at the end of the first year. Sally Deweese, who was born in Kentucky in 1824, menstruated at one year, and, according to Montgomery, was pregnant at 10. Lieber records a case in which menstruation began at two years nine months; and Cooke describes a hydrocephalic



FIG. 428. — Three-year-old girl with infantile gigantism.

case born in 1802. At four menstruation set in and hair appeared on the face. Gould and Pyle also record a number of instances, some beginning a few days after birth, although such phenomena should not properly be termed menstrual.

In such cases we often find disproportionate bone development and marked, secondary sexual characteristics, in fact, a sort of infantile gigantism, which does not imply adult gigantism, for growth in stature stops abruptly at an early age. The pelvis may seem as wide and fleshy as that of a plump adult woman and the external genitalia may also be of adult aspect. Prochownik had to operate on a three-year-old girl with this peculiarity and she died within 24 hours. Her uterus was similar to that of an adult woman in the post-menstrual phase. The particulars given below show in the upper line the normal female proportions between five and 10 years old, the lower line shows the abnormal development in the girl in question.

Total Length of Uterus.	Cervix.	Corpus.
Normal 26 mm.	20 mm.	8 mm.
34 mm.	20 mm.	14 mm.

In such cases impregnation may occur and lead to full pregnancy. Genuine *pubertas præcox*, however, is an even more complicated condition. There is not only pelvic but also mammary development. The general outlines of the body become fuller and rounder and the pubic hair appears.

In one or two cases which are recorded as menstruating at or about the first year the pubic hair is said to have been visible at birth.

Unfortunately, the recorded cases are not described in full detail, and although precocious menstruation and mammary development are repeatedly mentioned, the existence or otherwise of pubic hair is not recorded. In Fig. 428 we see an abnormally obese child of three years of age with mammary hypertrophy. There was no record of other symptoms of *pubertas præcox*.

We will now proceed to give a further selection of illustrative material. Bouchut described the case of Nelly O., who was born on January 27th, 1872, in London. The child, who from her birth had well-developed breasts, began to menstruate at the twenty-second month, the menses following at intervals of four weeks and being



preceded by a time during which the child was clearly unwell. At the age of four years two months the breasts appeared fully developed, with nipples as large as the top of a man's thumb, and areolæ projecting and rosy in appearance. At each period the breasts became slightly swollen, and the whole body, which weighed 55 lb., appeared in form and contour to be mature, as also seemed the general characteristics of the individual in question.

Another detailed account was published by Stocker concerning one Josephine X, born as one of twin sisters on March 15th, 1871. Her sister was completely normal and remained so up to the eighth year of her life, but Josephine at birth was very much the larger of the two. At six months she began to show precocious development of the breasts, and two months later she and her sister cut their first teeth. At about a year old she had a slight genital hæmorrhage which recurred after a couple of years—at the beginning of May, 1874—and then became established without difficulty at intervals of four weeks and for three days on each occasion. After five years of age, the periods became very profuse and the girl complained of pain in the abdomen about three days before each menstruation—these pains were not constant, but intermittent. The girl had blue eyes, dark ash-coloured hair and the bodily proportions of a 12-year-old. Her sister's physique was quite normal for  $7\frac{3}{4}$  years.

Reuter has also given an account of the case of Luise R., who menstruated at 15 months and exhibited striking mammary development.

Peacock and Drummond have given accounts of English *pubertas præcox* cases.

The former recorded the case of Jane Jones, who had menstruated every three to four weeks for two days at a time since her fifth year. At three she likewise displayed mammary development.

In Drummond's case a two-weeks-old child had a hæmorrhage which was repeated almost every month at the same time. She was described as a fat little thing with breasts the size of those of a girl of 16 or 17. According to her mother's statement her breasts sometimes became hard and swollen; whilst at four the nipples were over 5 cm. long and the highly pigmented areolæ 2 cm. broad. The vulva also was well developed with prominent nymphæ, but with no pubic hair. The child was rhachitic and knock-kneed, whilst in general intelligence she corresponded to that usual at her age. Similar cases were recorded by Bernays, who described a child menstruating at 16 months and with developed breasts at four years nine months; and by Descuret, who mentioned a Parisian girl who menstruated at  $2\frac{1}{2}$  and had striking mammary development at eight. She married at 27.

Thus, there are several cases in whom a considerable development of the breasts has been observed and recorded before five years old. In some cases, mammary expansion was earlier than menstruation, and in others abnormal development of the vulva is recorded.

Thus Wladimirow records the case of a Russian girl of  $6\frac{1}{2}$ , who was 121 cm. tall, weighed 27·500 kg., and whose breasts were the size of apples and almost pendent. The mons veneris was thickly covered with dark hair 2–3 cm. long; whilst the labia majora, the nymphæ, the clitoris and the hymen resembled those of a woman of 15 to 17. Menstruation usually lasted two days. The child was rhachitic, was modest and intellectually normal.

Ramon de la Sagra recorded the case of the negress, Isabella, in 1864. At the end of her first year she menstruated, and from birth her breasts and pilous system were well developed.



G. E. von Haller described the case of Anna Mummenthaler from Trachselwald (Bern). She was born in 1751, menstruated at two, and showed developed mam-

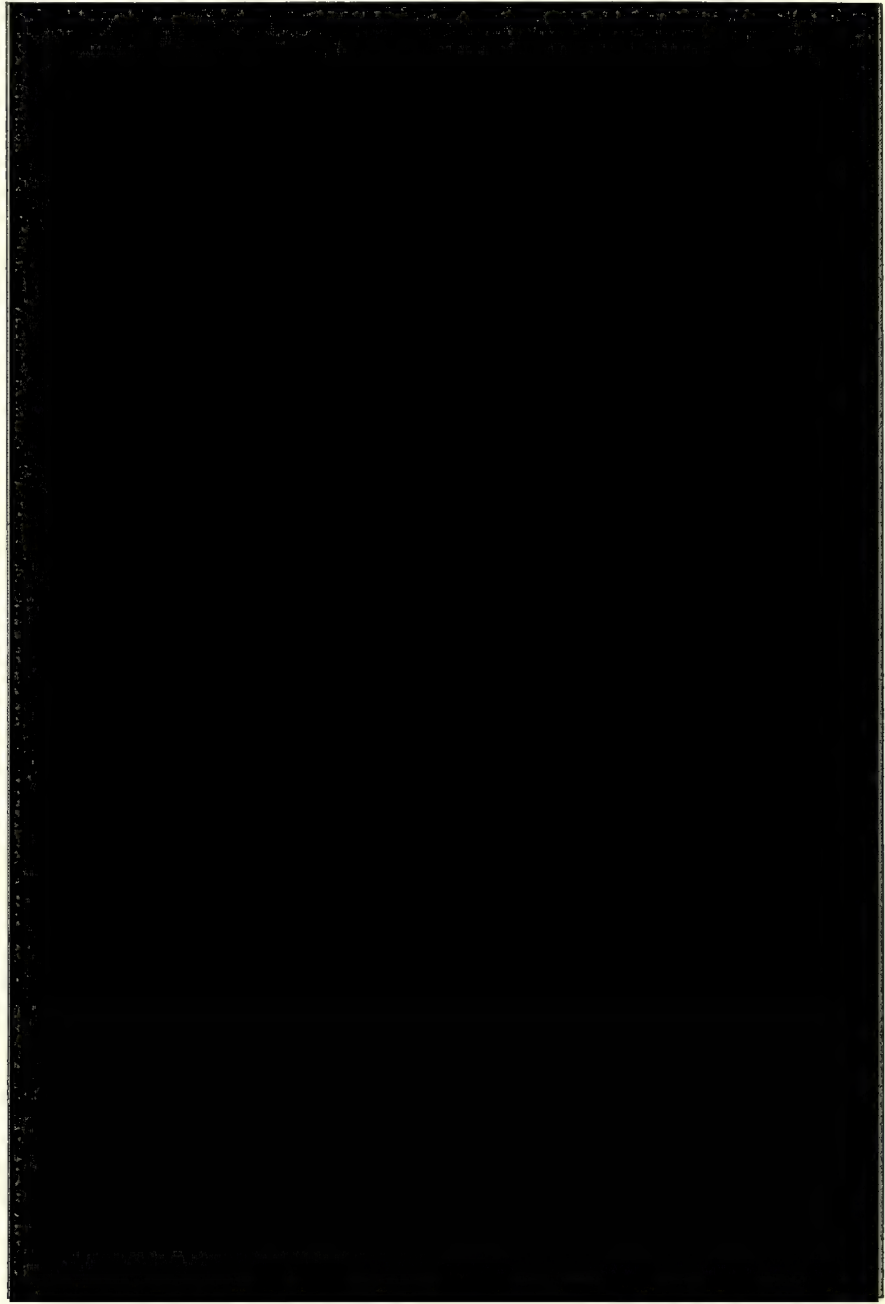


FIG. 429.—Precocious girl from Berlin. Age five years. Well-developed pubic hair. (Photo, C. Günther, Berlin.)

mary glands and pubic hair from birth. At nine she was pregnant ; continued to menstruate till she was 52 and died at 74.

Another case of *pubertas præcox* and very early pregnancy was that of an unnamed girl born on October 17th, 1868, at Ober-Pallen in Luxembourg. She was, states Molitor, a large, strong baby and her pubic hair was visible at birth. She



began her periods at four and they became regular at five. She was of middle stature and robust with a keen and bold look ; her breast was full and well developed and her genital region very hirsute. At eight years she had frequent sexual intercourse with a man four times older than herself ; after three months, cessation of catamenia occurred, and then  $2\frac{1}{2}$  months' irregular hæmorrhages. She expelled a hydatid mole together with a well characterised embryo on July 27th, 1877 (at eight years and nine months) and recovered completely.

Again Gedicke recorded the case of Charlotte L., who menstruated at seven and exhibited well-developed breasts and a growth of fine hair about the vulva. A post-mortem showed that she suffered from steatoma and hydatids of the ovaries.

Geinitz published the case of Anna S., of Altenburg, who menstruated at one year seven months ; had breasts the size of an adult woman, and pubic hair  $\frac{3}{4}$  in. long. At a post-mortem a sarcoma of the ovary was discovered.

Lenhossek described the case of a girl who menstruated at the eleventh month, and who at the age of two exhibited well-developed mammary glands and pilous system.

K. G. Carus recorded the case of Christine Therese A., who was born on January 27th, 1838 ; menstruated at two, and in 1841 exhibited the breasts and dark pubic hair of a girl of 16.

Cortejanera also records a curious case in some detail. The child was born late in the year 1877, and at seven months (April 4th, 1878) genital hæmorrhages began, lasting for three days and continued regularly till March, 1879. Then, at the age of 18 months, came profuse leucorrhœa, instead of hæmorrhages, lasting till the middle of January, 1880. There followed a violent colic and menorrhagia, the periods returning till the time of observation (28 months old). The child had the squat proportions of a fully developed but undersized adult woman. Her breasts were larger than lemons, prominent and with the elasticity and turgescence of maturity ; the nipples and areolæ were those of a girl of 17. The external genitalia very well developed ; the vulva very wide and labia thick and fleshy. The mons veneris had a growth of rather long, reddish hair. Morally and mentally the child was only a few months old.

Papendiek published the case of a girl from Dalheim, near Gutenfeld, in East Prussia. When almost three she was intellectually lively, weighed 32 lb., and since she was a year old showed thick and long pubic hair. Menstruation had not appeared at the time of the report.

Bevern described the case of Theodora Posassi who menstruated at  $3\frac{1}{2}$  and exhibited well developed breasts and thick black pubic hair. A post-mortem showed ovarian sarcomata.

Tilesius recorded the case of Johanna Friederike Gloch from Köthen, who was born on April 28th, 1799, and died in 1803. She had thick, dark, curly pubic hair, pendent breasts and suffered from hydrocephalus and general obesity. At the post-mortem, uterus, ovaries and vagina were as those of an adult.

On October 15th, 1883, a girl of  $3\frac{1}{2}$  was shown before a meeting of the Obstetrical Society of Leipzig. Her appearance was that of a child of six or seven. Her breasts and vulva were well developed, and since 1881 her menstrual periods were of the normal monthly type.

In 1854 Wilson described the case of Mary Anna G., who menstruated from the fifth month at varying periods until her sixth year. She had black pubic hair and breasts as big as fowls' eggs from birth.

Lorey described the case of Elisabeth Klinck, who was born in Bornheim in



1875. She menstruated at nine months, and in 1882 exhibited well-developed breasts, a strong growth of pubic hair and at six years four months weighed 47 lb. and was 120 cm. tall.

Lesser recorded the case of a Swiss girl who menstruated first at three. At six she showed a strongly-developed pilous system, not only around the vulva, but extending from the linea alba to the navel. Her breasts also were fully developed.

Another case, that of Eva Christine Fischer, of Eisenach, was exhibited in 1753 at the Easter Fair at Leipzig. She was born in 1750 and died in May, 1753. She was said to be as developed as a woman of 20, and she is depicted in the Leipzig Anatomical School.

In all the above group (excepting Eva Fischer) it is stated that pubic hair appeared before the first dentition. In three cases it was present on the mons at birth.

Mathilde H., an American case, born in Louisiana on September 30th, 1827, menstruated from three years old, quite regularly with periods of four days' duration. Le Beau states that her genitalia were covered with hair at birth, but mammary enlargement is not mentioned in this case.

We must remember that even in normal puberty there is no hard and fast rule as to the sequence in which the sexual characters appear. Thus, M. Bartels has recorded the case of a girl of 11, well fed but not obese, with no sign of menstruation and with quite puerile genitalia, no axillary hair, but breasts as fully developed as those of a mature woman and about the size of a large mandarin orange.

Max Bartels also recorded another case in which the sequence was different. This little Berlin girl (born on June 16th, 1886, and photographed by him on May 31st, 1891; see Fig. 429) was very tall for her age, but quite childish in contour. Her voice was very deep, like a boy's when his larynx develops at puberty; no axillary hair, infantile breasts, and no signs of menstruation. She had, however, a strongly developed mons veneris and labia, with a thick growth of rather long, fair, slightly curly hair. Mentally, she gave the impression of a child of about eight.

Between 1902 and 1907, we have records of some highly significant cases.

Stein observed a case in which menstruation began at seven months and continued regularly at a four-weeks' interval; simultaneously, the breasts began to grow, the pubic hair to appear and the labia to develop. In 1907, when Stein recorded his observations, the child was  $3\frac{1}{2}$ , but had a deep and expressive voice, and though not above the average stature of seven years, her breast might have been that of 16; the areola was deeply pigmented and the glands quite perceptible to the touch. Moreover, she had a definite sensation of a sexual nature. No signs of hydrocephaly, and a complete recovery from early rhachitis.

W. Stöltzner described the case of a girl, two years and ten months old at the date of his report, and menstruating since her second year. The intervals between the first three periods were said to have been eight weeks each, but later periods recurred at fairly regular five-weeks' intervals. The girl had the breasts of a 14-year-old girl. Her vulva was large and moist, with a gaping vaginal orifice, but hardly any indication of pubic hair. Axillary hair was lacking. Skin, and hair of the head, very fair. Height, 102 cm.; weight, 19.510 kg., corresponding to five and six years old respectively. The uterus was found to be unusually large, especially in its corpus. Her mother said that the child's breasts began to enlarge some time before the first period. Her weight at birth (3250 g.) was in no way extraordinary. There was a tendency to rhachitis.

Stömmer's case was 10 years old when his report was made in 1902. At six



months her breasts were noticeably large. At 18 months appeared a *fluor albus*, lasting some days, and then the first hæmorrhage without any signs of pain or discomfort. The hæmorrhage was slight, normally red, and lasted some days; after the first occasion, it occurred every four weeks till the end of the fifth year, and since that time every six or eight weeks for three to four days. The colour became much darker. At six years she had hemispherical breasts, large everted labia, and rather long, dark but sparse pubic hair.

Finally, there is a case described by R. M. Stone, dated 1904, and referred to by Buschan. This girl was two years and four months old, had thick pubic hair and prominent breasts and menstruated regularly at intervals of 28 days since the age of six months.

Very instructive also is the result of several post-mortems on these cases, in which it was found that the girls had vagina, uterus and ovaries of adult size and structure. This must have been the case in girls who became pregnant at 13, 12, 11, and even in two recorded cases, at nine years old, and carried their babies to term.

We must also remember that among the coloured races pregnancies occur quite often at an age when European girls are still regarded as children; and this has been recorded in both cold and torrid climates (*cf.* the younger of the two Bushman girls whose photograph was communicated by F. Seiner to Max Bartels, and which is reproduced (Fig. 300) ).

In living specimens of this heterochronous anomaly, it is, of course, impossible to judge how far they are pathologically affected in their internal organs, but we do know that in cases of death at a very early age, *pubertas præcox* has been found to be associated with pronounced abnormalities; *e.g.*, hydrocephaly, occasionally hydatid moles, cysts and sarcomata; moreover, in several cases of such children who survived, it has been expressly mentioned that they were rhachitic, and some suffered from excessive obesity.

But there are some genitally precocious children who appear otherwise quite normal and healthy. We are unable to trace any connection between *pubertas præcox* and the mother's special habits or experiences during pregnancy; nor does the condition seem to be hereditary in certain stocks.

But Guggisberg, after studying possible factors, reached the following conclusions:

(1) There may be a congenital excess of energy in the germplasm, and this may be largely hereditary.

(2) There may be primary disturbances of gonadal functions. (Tumours of the ovaries, either malignant or benign.)

(3) Primary disturbances in the endocrine system. Pituitary disturbances may lead to *pubertas præcox*. The pineal body may also be a determinant. Neurath found three cases of tumour in the pineal body, among 21 cases which he investigated ætiologically, and has described the pathology of premature puberty.

Tumours of the adrenals, especially of the cortex, seem the most frequent accompaniments of genital precocity, and may be accompanied also by masculine traits, such as very thick body hair and profuse hair on the face and upper lip.

(4) Certain forms of disease, especially chlorosis. Aschner believes that the trophic centre of the diencephalon may be decisive in causing *pubertas præcox*. Lenz believes in intrauterine factors; whilst Halban attributes the condition to the influence of substances of the placenta.



## CHAPTER IV

### ANTHROPOLOGY OF MENSTRUATION

#### 1. COLLOQUIAL TERMS AND CIRCUMLOCUTIONS

THE onset of menstruation is a profoundly disturbing occurrence to girls, and it is apt to cause both anxiety and a feeling of shame. Therefore, it is referred to indirectly or in veiled and ambiguous terms. Thus, the Old Testament in English, speaks of "the manner of women."

The peoples of Ancient India (quoted by Schmidt <sup>8</sup>) termed it "the flower growing in the house of the god of love"; (*vide* the Pañcasāyaka of Jyotirīśwara Kaviśekhara) and Vātsyāyana in his Kamasutra, advised the maiden to speak to her too importunate lover of "that illness that comes without being called, cannot be concealed, cannot be revealed, and yet is not always present."

Manu speaks of "the four days which are condemned by the Illustrious Ones." The Japanese have many distinct phrases and expressions for this function.

The most usual is *gek-ke*, which is the equivalent of our "monthly period." *Mengori* or *megori* means "recurrence," return of the seasons. A term much in use in the folk-songs and proverbs, but too unrefined for conversation is *akane Son-ke*, redness. *Geschin* is the "monthly message"; and *sakh* means simply "duty" or "obligation." The last two expressions are used less often.

The Japanese also call the sixteenth year of a girl's life "the year of the cleavage of the melon," according to Ehmann.

The Nayar of Malabar have a special term for the menstrual losses of their young princesses: *tirrapickerdu* = sacred blossoming. The same idea, Knopf states, is expressed by the Ama-Xosa. The Swahili women, according to Zache, call the first period *kuvunja ungo*, a term referring to the husking of grain on the flat basket-work, *ungo* or disc. The Serbs use the simile of blossoms and seeds; and so do the women of Latvia, according to Alksnis. The term used is *seedi*, and the womb is *seddu mahte*, *i.e.*, the mother of seeds and blossoms.

The women of Central Europe use the equivalents of the current English phrases, "monthly time," "periods," "courses" and "being unwell" or "poorly." The only striking expression quoted as peculiar to modern Germany is *roter könig* = "the red king," which is, however, considered impossible except in very humble circles. Mediæval expressions were much more varied, and in both languages we have the convenient phrases "a visitor" or "a caller" or "news from my aunt."

Hoeffler <sup>3</sup> is of the opinion that there was no definite single term for menstruation among the ancient Teutons. The old Danish *urensoel* and Swedish *oren* mean simply that which is *unclean*. The seven Old High German terms known to us are all compounds with *month* (*Monat*), and the Anglo-Saxons who came into early contact with the Roman and Romance cultures also used compound terms, such as *wifa-monodlican*, *i.e.*, "the monthly of women"; *monad-gecynd*, etc.



## 2. THE CHEMISTRY OF MENSTRUATION

The amount of vital fluid lost during the monthly period can, of course, only be approximately estimated. As Ludwig has remarked, exact figures such as are put forward by some authorities must be treated with great caution. Most physiologists and authors of professional treatises observe this caution and quote round numbers with very wide scope for variations.

They suggest an amount varying between  $3\frac{1}{2}$  and 702 gm., and Funke says "the average loss is estimated at between 4 and 5 oz. In some women, however, the loss is much less, and in others, quite profuse."

Hoppe-Seyler<sup>1, 2</sup> and his pupils concluded that there is generally an over-estimate on this matter, for the genital secretions flow very freely and dilute the uterine hæmorrhage at these periods. The normal loss—according to the view of Hoppe-Seyler—would be, on the average, 37 c.c. for young and healthy individuals; over 60 c.c. would be profuse, and over 100 c.c. excessive and abnormal.

The average daily loss is supposed to be between 15 and 20 c.c., *i.e.*, from 30 to 50 gm. (1.058 to 1.764 oz.).

In comparative anthropology, we are reduced to the merest guesswork on this subject; it has been supposed that climate and race are influential factors, but such indications as we have on record vary considerably. Some estimated 3 oz. as the norm for England and Germany; but Smellie (p. 108) and Dobson, gave 4 to 6 oz. (p. 5) and Pasta 5 oz. for the same regions.

Emett and Fitzgerald maintained that in Spain the menstrual loss is as much as 1 lb., and others state that in the tropics it may be considerably more.

But are these results typical or do they refer to possibly exceptional individual cases only? We do not know.

De Rochebrune found that 140 Wolof Negresses had losses up to 95 gm. But Riedel<sup>1</sup> defines the menses of the women on the Amboina group, Tenimber and Timor Laut islands as scanty.

It has been asserted, however, that changes of climatic environment may cause great and rapid menstrual changes. Blumenbach was one of the first to mention that European women who went to the Guinea coast were at once troubled with uterine hæmorrhages.

The cause of this well-known effect of residence in the tropics on women of our own races may be anæmia, arising through malarial infection. Bestion and other French medical men believe this to be the case in certain districts of Africa. Stormont reports that the native women of Sierra Leone are always slightly feverish at their first periods; this may be the result of a malarial taint. Saint Vel, however, found no aggravation or increase of the menses in Martinique, though, of course, his results do not invalidate those of other observers in other tropical regions.

Weber's Russian results are of significance. He found that the amount of menstrual hæmorrhage was not much affected by the early or late age of the onset. Organic constitutional type, however, was obviously very important, and a clear indication was found in the colouring of the hair. The usual assumption that the menses are more profuse in brunettes than in women of lighter colouring was not confirmed; Weber found that the hæmorrhage was very often pronounced in fair women, especially in those with red or auburn hair.

The chemical composition of the blood lost during the period has been recently tested by Stickel and Zondek, who took the precaution of drawing their specimens directly from the cavity of the uterus in order to keep it free from cervical and



vaginal secretions. They found the following characteristics as compared with the blood drawn from the rest of the body :

(1) *Oligocythæmia*. About 3,000,000 red corpuscles to 3000 white. Among the latter the lymphocytes were more numerous and the neutrophiles less.

(2) *Decrease of Hæmoglobin Content*. (Partial hæmatolysis of the uterine blood.) The erythrocyte decrease is greater than the decrease of hæmoglobin.

(3) *Physical characteristics* (such as specific gravity and molecular density) are diminished. The presence of hydræmia. This quality is only modified through the contact with the uterine mucosa.

There have also been a few investigations into certain additional chemical components of importance. We cite, for example :

(1) *Arsenic*. It has been shown that whereas this substance is ejected from the male in the urine, it is stored up in the female uterine glands, and normal human blood has no arsenical content. Arsenic appears to be as necessary to the developing foetus as phosphorus.

(2) *Phosphorus, Magnesia, Sulphur and Lime*. It appears, from recent research, that these substances are stored in greater amounts in the decidual membranes of the pre-menstrual phase, and are shed in menstruation if no embryo effects nidation in the uterus.

(3) *Glycogen*. The secretion of this substance begins ten days before the first day of the menstrual flow. Shortly before the period the glycogen is extruded from the glands and chiefly from the mucosa, and has disappeared from most glandular structures two days before the menses appear.

(4) *Lipoids* were found by Aschheim in his work on the uterus only in appreciable amounts in sexually mature women during the *pre-menstrual* phase.

(5) *A fermentative substance which dissolves albumen* (according to Halban and Fränkel) in the pre-menstrual stage. These investigators assume that this substance causes the special liquidity of the menstrual flow. Injections of the uterus of rabbits with trypsin provoked a mucous swelling which was histologically similar to the decidual phenomena of the pre-menstrual and pre-gravid phases. The trypsin content is very considerable pre-menstrually, and extremely slight immediately after menstruation.

Thus we find that menstruation does not only imply a uterine hæmorrhage, but also involves the expulsion of other substances of great value for the potential embryo, but distinctly toxic if secreted in large quantities and retained. Menstruation is thus in one aspect a cleansing liberation from what we now term *menotoxin*.

It has been stated that cases of hysterectomy, in which the ovaries were left functional and intact, have suffered from morbid symptoms which can only be attributed to self-poisoning through *menotoxin* retained in the organism. In such cases, ovarian preparations were useless, but blood-cleansing, and purgative methods were beneficial. This subject has been carefully investigated of late, especially by Professor Bela Schick.

Alois Czepa published an article in the periodical *Umschau* of the date July 24th, 1920, in which he referred to and quoted an address by Professor B. Schick to the Medical Society of Vienna. Professor Schick had handed a magnificent spray of roses to one of his domestic servants in order that she might arrange the flowers in a vase, full of water, but next morning, they were withered. He was amazed, but the girl said she ought to have foreseen that would happen, for such was always the effect of menstruating women on flowers which they handled. The Professor thereupon attempted a simple comparative experiment. He gave two bunches of similar



flowers (in that case, anemones and chrysanthemums) to two domestics, one of whom was at her period, and the other intermenstrual, and asked them to hold the flowers in their hands for 16 minutes each. The non-menstruating girl's bouquet remained fresh and unspoilt ; in the other case the flowers drooped and were seamed with brownish streaks after 16 hours, and withered after 24. The leaves fell away after 48 hours.

These are curious and illuminating results, but it may be mentioned that floricultural experts are of the opinion that there are chemical "antipathies" between certain kinds of flowers which spoil each other if they are put together in the same vessel, or in a loose spray or bunch. Thus, *mignonette* is said to be antipathetic to other species of plants, whereas poppies injure some other species, but lose colour themselves at the same time. The same effect of mutual injury is said to be both suffered and inflicted by vetch flowers, and by yellow tea roses with red roses in one and the same vase. Thus careful confirmation and repeated tests would be necessary before we could be sure of Schick's theory.

Professor Schick himself appears to ignore this particular aspect of his flower tests. He maintains that *menotoxin* is at its greatest virulence on the first day of the period, and much less so on the second. On the third day, the test flowers in the hands of the menstruating girl remained in better condition than those held by the non-menstruating "control," and on the fourth day, no damage to the flowers was demonstrable.

Moreover, some women during menstruation seemed quite free from this toxic exudation, and others showed it to a very slight degree. Menotoxin was also found in sweat from the armpit during the period, and in drops of blood drawn from the lobe of the ear. The toxin is supposed not to be soluble in serum, and therefore, contained in the red corpuscles ; it even survives a rise of temperature to 150°, and is supposed to saturate and penetrate the rubber gloves of the laboratory worker. Moreover, Schick found that his menstrual test cases often could not prepare dough with yeast, and when they partially succeeded, their dough was half as high as that of the non-menstrual "controls."

[Macht and Lubin have partially at least confirmed Schick's experiments, but Labhardt and others have questioned the reliability of the evidence. Further experiments are necessary in order to remove doubts on either side (*cf.* also Gengenbach).]

### 3. DISTURBANCES AND DIMINUTIONS OF MENSTRUATION

In many cases habits of life appear to influence menstruation and cause general disturbances. Both Velpeau and Gardien have declared that the Greenland Eskimos only menstruate quarterly, *i.e.*, once in every three months, and that, in certain cases, menstruation was even rarer, occurring only twice or thrice during the year. We are not told of the sources or material through which these two French obstetricians obtained this information, but it has also been stated that the menses were suppressed among the Eskimo women during the Arctic winter and in times of famine.

Similarly it was reported in a *Mémoire* in 1762 that among the Samoyedes and women of Lappmark, menstruation occurred very sparsely and infrequently. This is confirmed by Linné, who compares them with the Swedish women.

Von Bischoff also was able to state that for at least six months of the year the Fuegian women who were brought to Europe had no perceptible menstrual losses.

Although menstruation does not invariably accompany ovulation, it has long



been thought that there can be no menstruation without ovulation in the human female, although such is not yet satisfactorily proved. In these Fuegian women we see a normal four-weekly follicular rupture and extrusion of ova without the hæmorrhage of menstruation. But the death of two of their number during their European travels enabled the anthropologists and medical men in charge to make post-mortems which revealed no trace of ova approaching maturity, *i.e.*, follicular rupture. Therefore, we may assume that in some of the native women of Tierra del Fuego, both menstruation and the production of ova occur at much longer intervals than among the majority of the human races. There may be two tenable explanations. It is possible that the hard struggle for life and the poor and monotonous diet mean a perpetually low organic condition among these people, and thus there is insufficient energy for the frequent activity of the genital system. Or, it is possible that this half-yearly menstruation is an immensely archaic survival from the vernal and autumnal sexual seasons, the "rutting" of our prehistoric and primitive ancestors.

Habits of life may, it appears, either promote regular menstruation or cause direct injury. Rigler found much menstrual irregularity, both metrorrhagia, amenorrhea and dysmenorrhea among the secluded and hygienically neglected women of the East, and the frequency of uterine disease among the Hindus has been also observed. On the other hand, Polak declared menstrual irregularities extremely rare in Persia, and he noted that they occurred only among those women who were neglected by their husbands.

According to Blyth, menstrual anomalies are not unknown in Fiji, and he attributes these disturbances to the habit of bathing in the rivers and wading in the sea in order to catch fish.

Ravn says that suppressed periods are common among the Faroe Islanders. The women go about barefoot and their feet often become soaked or chilled to the bone, thus causing severe shocks and cold.

Olafsson (*Th.* 2, pp. 36-37) made very similar observations and comments on Iceland, especially as concerned the unmarried girls, both on the Northern coast and throughout the island. He attributed these disturbances to the lack of exercise, to the very sedentary life during the long winter at the loom or the spinning-wheel, to the habit of crouching or squatting on a mat or rug or on the cold floor, to their lack of mental interests and distractions, their apathy and melancholy. He added: "perhaps there are many other reasons for the ill-health of the female sex which no one considers or thinks worth while to discover."

According to Holst, the disturbances in menstruation at puberty among the Esthonian girls is due to over-strain among the hard-working peasantry, and to deficient food, the results being many morbid conditions.

Keating was informed by a Red Indian chief of the Pottawatomi tribe that irregular and suppressed menstruation were common among the women of his tribe, but he expressed himself briefly and with reserve on the subject.

Bernoulli also reports the same symptoms as "frequent" in Guatemala.

Similarly, in Sierra Leone, the practising surgeon, Robert Clarke, found amenorrhea, dysmenorrhea, hæmorrhages and leucorrhea as common among the native negresses as among the resident Englishwomen.

The traditional medicine of China teaches that the pulse-rate is an index of menstrual health or its reverse. They believed that three special areas, *tsuen*, *tsche* and *koun*, and the rate and depth of the vibration, are the keys to general health. If the *tsche* area in the right arm has a more rapid and vigorous pulse than on the left, the woman is pronounced healthy. If it is slight, hard and superficial, menstrual trouble



is diagnosed. If the pulse is hardly perceptible, there is excessive hæmorrhage, and so through a whole register of slight gradations and differences, all interpreted as regards menstrual symptoms and conditions (Hureau de Villeneuve). Dabry says that the Chinese doctors also give great attention to the pulse-rate in the liver and kidneys, and consider a hard, superficial and rapid pulse in those regions shows disturbed periods. A deep and weak pulse is considered to show excessive losses. Premature menstruation is associated with deep and slow pulse; insufficient menstruation with slight, abrupt and superficial vibrations. If the menses are altogether suppressed, the pulse is deep and weak and at long intervals.

Jenks has explained the views held by the gynæcological knowledge of Classical Antiquity. Hippocrates held that such women as had never been pregnant were far more subject to menstrual irregularities and sufferings than those who had borne children, for the post-partum lochia was beneficial to the whole circulation. He was also of the opinion that pregnancy expanded the blood vessels in abdomen and breasts, whereas the women who had never borne children had contracted and hard veins. He had noticed that the average mean temperature is slightly higher in women than in men, and considered that the normal monthly period prevented this temperature from reaching a dangerous pitch.

Neither Hippocrates nor his immediate successors had any exact knowledge of internal human female anatomy, in spite of his recipes for curing both obstructions and hæmorrhages. Paulus Ægineta recommended both blood-letting and ligatures round the thighs for three or four days before the date due, which bandages were removed a few hours before the onset. He also mentioned fumigations and a draught of myrrh. Galen's procedure was again somewhat different. The Arab masters of medicine take the same line; both Avicenna and Serapion advised blood-letting, ligatures round the thighs and such supposed emmenagogues as musk, castor oil and myrrh.

#### 4. NORMAL MENSTRUATION

We have seen above that among the Eskimo, Lapps and Fuegians, menstrual anomalies and very long intermenstrual pauses may become habitual. With regard to the tropical regions the material is both very scarce and uncoordinated. We assume that it is admitted that the menstruation of European women normally lasts not less than three days at a time, and not more than five.

The Talmudists were careful to attempt to examine menstrual symptoms, for menstruation was, for them, a matter of ritual and domestic significance. Kazenelson points out that the accessory symptoms (tendency to sneeze or yawn, pain and tightness at the orifice and in the lower back, mucous discharge, nervousness and anxiety), were known as heralds of menstruation; and women were advised to use specula and pads of wadding in order to determine their condition.

The Hindus, according to Schmidt<sup>9</sup> considered healthy menstrual blood to be the colour of lake, and to leave no trace on clothing after it has been washed.

Wernich found the duration in healthy Japanese women from three to four days. In the hospital cases, it was usually longer. A Japanese folk-song, addressed by the girl to her lover, assumes that the period lasts for a week. The accessory symptoms recognised in Japan include slight shooting pains in the hypogastric region, pressure in the temples, pain in the loins, and a cold sensation, dragging in the thighs and both frontal and occipital headaches; in fact, the troubles and debilities well known in Europe.



Jagor<sup>2</sup> estimates the duration of the periods among the Nayar women as three days; Chervin gives from three to five for the Hindus; and, according to Radde, menstrual periods rarely last longer than two days among the Chevsurs of the Caucasus.

Houghton, quoted by Roth, mentions four days as the rule for the Dyak women of Sarawak.

Jacobs<sup>2</sup> gives from four to five days as the rule for the women of Achin.

Rush (I., 60) observed that the North American Indian women had very regular, though not profuse catamenia. Among the Omaha three to four days was customary. But Currier found great differences in the tribes he studied. He was informed that the women of the Yankton Sioux had periods of from two to five days' duration; of the Sauk Indians (Indian Territory) from three to four; of the Puyallups from three to five, and of the Apaches from five to six days.

Azara mentions the slight and scanty losses of the Guarani and other tribes of Paraguay, and adds that they occurred at long intervals. The surgeon who accompanied La Pérouse's expedition, Dr. Rollin, gives three to eight days as the menstrual duration for the Indian women of Chile and of California, according to constitution and habits of life.

Hewan found the duration for negresses of the Calabar Coast to be from three to four days; whilst De Rochebrune commented on the short and slight periods of the Wolof women.

We are not sufficiently informed to draw any general conclusions. It may, however, be taken as probable, that there is no reason to think the tropics alter the duration of the individual menstrual periods either one way or another.

There is an interesting observation concerning the negresses of Loango. During their menstrual periods, the skin of their whole bodies is said to be a shade more dusky than in intermenstrual days. It would be useful to know whether this holds good for other coloured races.

Not only the uterus, but also the vagina and possibly the oviducts are involved in normal menstrual processes.\* The oviducts, like the uterus, are said to have an increased pre-menstrual mucous secretion which much retards and almost stops the capillary current and makes the onward movement of an ovule through the tubes very slow. The collum uteri does not appear to be much affected by menstruation, but both cervix and corpus are demonstrably so. The isthmus does not share in the pre-menstrual swelling, but does share in the hæmorrhage. Dierks has recently investigated changes in the vaginal epithelium, and others have detected changes in its bacterial flora, in the quantity of the secretions and their lactic and glycogen content. It has been thought that the consequent decrease of vaginal acidity directly promotes conception, for spermatozoa survive much longer in an alkaline environment. The lactic acid of the vagina is formed out of the glycogen content, through the action of certain micro-organisms normally present. Other menstrual symptoms involve the mammary glands which become swollen, while the nipples are unusually sensitive. There is also apt to be unusual activity of the bladder and bowels, whilst the liver is said to become enlarged and the gall bladder occasionally gives trouble; and Küster found in 80 per cent. of his cases slight renal diabetes a few days before the onset of the menses. (*Cf.* further, the work of Gumprich, and Harrop and Mosenthal.)

\* [See Czyzewicz.]



## 5. MENSTRUAL DISTURBANCES AND POPULAR REMEDIES

Popular beliefs are unanimous in regarding suppressed or irregular menses as serious symptoms. Nor is this view confined to the European peoples. We find recipes against menstrual anomalies among many different races, and we may conclude that if such recipes were current, the conditions they were meant to cure were fairly frequent. For instance, the Algerian women have many different methods of dealing with suppressed menses. Sometimes they throw some ammonium chloride, which they term *nchader*, on to the fire, and squat or straddle above the fumes ; or they use other materials for fumigation immediately after various ceremonial ablutions. Or they introduce tampons of wool or cotton smeared with black sulphide of antimony into their vagina. But sympathetic magic is considered more efficacious. The woman writes the names of her father, her mother and other near kinsfolk on four or five poplar leaves, and puts the leaves into a copper box, which is then laid in the fire. If smoke rises thickly and hides the receptacle, all will soon be well. If the menses are punctual, but scanty and painful, the woman drinks a decoction of black cumin (*Nigella sativa*), according to Bertherand. But if she suffers from too profuse losses, a compound of vinegar and diluted vitriol, or of honey mixed with vitriol and the rind of pomegranates are inserted into the vagina.

If a Fezzan girl should be of full womanly physical development, but without menstrual periods, she is given, according to Nachtigal, a brew of barley meal, butter and sugar for three days in succession and a paste made from madder.

The Galla and Harari women appear to be fairly free from menstrual anomalies. At any rate, Paulitschke ascertained and published a list of 66 medicinal drugs in use among these tribes, but only one was for curing these feminine ailments.

The Swahili regard a girl or woman with delayed menstruation as ill, and treat her with *dawa*, that is with relaxation and alteration of previous food tabus for seven days. Their food is cooked specially for them and they drink the liquid gravy. Moreover, Velten states that "whatever the girl may be doing, and wherever she may be, she must carry a wooden image or doll in her hand or bound on her back in a shawl, till menstruation begins."

In the East Indies and Malay Archipelago Epp states that a favourite method of hastening delayed menstruation is by rubbing and kneading various parts of the body, and then by consuming various herbs and vegetable brews which are reported to have excellent effects. These people believe that young girls have their periods at the new moon, older women when the moon is past full, on the wane. It has been reported that pregnant women had menstrual periods, but this is extremely rare.

The favourite emmenagogue among the Japanese is a plant of the genus madder (*Rubia cordiflora*), which the women call *shenkong akane*. Further recourse is now had to iron and quinine preparations, hot foot baths and mustard poultices, and both pepper and mustard are taken orally in various dilutions and combinations. Williams reports that *key-tu-sing* is employed for amenorrhœa among the Japanese. This is a tincture from the leaves of a tree belonging to the Ternstroemiaceæ ; it is drunk at full moon with mysterious ceremonies.

The Chinese women have a large collection of remedies, some of a curious kind ; e.g., mixtures of the urine of boys with old wine and herbal drugs. For pains in the heart before menstruation they use decoctions of grass roots, and of rotten lemons ; for blackish menstrual blood, peony rinds and symphytum, saffron and green



lemons. Excessive losses are countered by a mixture of sea-kale (*Crambe maritima*) and white spear thistles.

Goldie states that the New Zealand Maori were wont to isolate their women when suffering from dysmenorrhœa. They attributed great influence to the phases of the moon, like the people of Indonesia, and they believed that the older the woman was in years, the more she inclined to dysmenorrhœa, but also the more easily did she conceive.

Dysmenorrhœa was treated with a decoction of the New Zealand flax lily (*Phormium tenax*) and the *Rubus Australis*, a variety of brambleberry. The twigs and shoots had to be plucked from the eastern side of the plantation, for the moon rises in the east.

Goldie also reports a case of vicarious menstruation among the Ruatahuna natives. A woman of the Hamua tribe had severe nose bleeding at every new moon but never menstruated in the normal manner.

Blyth has given some facts about the Fiji Islanders. The bark or rind of the *vesi ndina* (a tree of the greenheart species) is grated fine, and an infusion made therewith. This is often efficacious in bringing on menstruation, and if it fails, then nothing else can avail. The midwives say that there are sometimes fatal cases involving *suppressio mensium* as a symptom. There are also cases of painful and excessive losses which the Fijians call *dravutu*. The native wise women treat these with another infusion of the grated leaves and stem of a climbing vine called *wa Ndamu*. The wise women visit and "treat" their patients at intervals of four days.

In European countries there are several popular remedies, mostly herbal.

In Little Russia the peasant girls used to drink an infusion of toothwort, (*Lathrœa squamaria*) in water, mixed with alcohol, three times a day. In the Novgorod district it was customary to drink half a glass of beer dregs with fresh milk in the morning on an empty stomach. Shavings of cherry wood have been used in the southern districts of Russia for all menstrual ills, both excess and defect; the wood must be shaved upwards if the flow is too slight; downwards if too much. Another Russian remedy, states Krebel, is the infusion of "herbal tea" of tansy (*Tanacetum vulgare*), and from time immemorial, 12 or 15 drops of oil of turpentine morning and evening, in a lavish draught of an infusion from artemisia. In Siberia the girls drink a saturated solution of wild geranium (*Geranium pratense*).

The Yugo-Slavs believe that a girl menstruating for the first time is able, by certain magic words and gestures, to determine the duration of all her subsequent periods. The Serbs also, according to Krauss,<sup>18</sup> have a form of "sympathetic magic," by which the woman with suppressed periods drinks "the juices of red flowers and berries." But those who suffer at the periods must wash themselves and pour the water over a red rose bush (Petrowitsch).

Glück states that the Poles and the Ruthenians recommend wormwood or mugwort as the best cure for "women's ailments." In Bosnia and Herzegovina, the leaves and stem of this plant are cooked with honey into a viscous paste which is used as an abdominal poultice against dysmenorrhœa; and the sovereign mugwort is also used internally against amenorrhœa. Another remedy for suppressed periods is the juice of the common centaury (*Erythrœa centaurium*) heated in wine.

According to Ankert, the women of Northern Bohemia (Czecho-Slovakia) in order to bring on a menstrual period, make a paste of bacon fat and the pounded and grated leaves of wormwood and myrtle in equal proportions, and apply the mixture to their navel and over the kidneys in two bandages.

Bastanzi says that in Belluno and Treviso, mallows and maidenhair fern are



used as emmenagogues. In Bari, according to Karusio, uterine hæmorrhages are treated by tying waist, wrists, and ankles with cords and even the fingers with black wool. The bleeding will then soon cease.

A similar trend of thought is shown in an ancient recipe in manuscript from the Mark of Brandenburg. A piece of a man's shirt and a piece of fisherman's net were burnt to powder and swallowed in liquid. This is meant to cure amenorrhœa. Flügel thinks that the favourite Frankenwald remedy is saffron mixed with wine.

The popular medicine for menstrual troubles in Franken are numerous, and include such supposed remedies as mixtures of cat's excrement with oil of roses and fresh human milk to cure an excessive flow. Hæmorrhages are also treated with shepherd's purse, soaked in wine mixed with water. Bitter almonds are also in vogue for the same purpose. In the Rhenish Palatinate the countrywomen take camomile infusions, feverfew (*Matricaria parthenium*), artemisia or southernwood, balm-mint, peppermint, lemon thyme, milfoil or yarrow and rosemary, as well as plum brandy, either neat or with saffron and aloes, which the countrywomen use frequently as emmenagogues. Sometimes, according to Pauli, they have themselves bled in the foot or take an infusion of savin if they wish to get rid of a suspected pregnancy.

In Swabia the popular remedies include savin and feverfew, as well as rue, columbine and the urine of goats. Mare's milk is also drunk diluted with rain-water. Bitter almonds are, according to Lammert, the favourite remedy for menorrhagia.

In the Middle Ages fumigations were much in use in Germany; this was a method learnt from the lore of classical antiquity and was recommended in the thirteenth century in an old German medical book, some of the contents of which are attributed to the learned doctor Bartholomæus Anglicus (see Pfeiffer, p. 24).

There is some fact and reason in the popular belief that "Viel Herumlaufen während der Periode macht früh alt" ("much running about at the period makes a woman old betimes").



## CHAPTER V

### ETHNOGRAPHY OF MENSTRUATION AND PUBERTY RITES

#### 1. THE PRIMITIVE VIEW OF LIFE AND THE CEREMONIES OF SEXUAL MATURITY

WE have already pointed out that the lives and habits of primitive peoples—including those sections of our civilised communities who have not freed themselves from traditional superstition are based on and bounded by concepts which we often overlook and do not understand. Primitive peoples are always at the mercy of mysterious “higher powers.” Many believe firmly that a portion of the human being survives death and returns to life and that every birth represents a fresh incarnation of the vital substance of the tribal ancestors on the mother’s side. Hence the immensely ancient matrilineal and matriarchal customs. Then, as some maintain, the social organisation became wider and more intricate, matrilineal custom was succeeded by the recognition of paternity and the patriarchal family. Hence the child had to be introduced into its father’s household and measures had to be taken to insure that it could be a useful unit of the tribe and capable of begetting or bearing children. These measures are the puberty ceremonies or puberty rituals.

An important part of the ceremonial of puberty is found in the sharp divisions between the sexes among primitives. Men and women in some primitive societies known to us spend much of their time apart, and have different occupations and even, sometimes, different dialects. In each of these two main sex groups there are often age groups, and puberty rites are essentially initiations from the youngest age group into the adult. The three age groups are: (1) childhood; (2) adult maturity from the capacity to fight in men and to bear children in women, to senescence and the climacteric; and (3) old age, from the end of the specific activities till death. The initiation rites are analogous to those which celebrate the accession to chieftainship, priesthood (medicine man) or shaman; also to the ceremonies of marriage, which introduce the bride into her husband’s tribe, household or sphere of power and ensure fertility. The final great ceremonial occasion is at death, often thought of as the passage into another mode or plane of existence.

All the sagas, legends and fairy tales of our European civilisation are, when analysed, echoes of archaic beliefs, customs and ceremonies. The insistence of some writers on astronomical or meteorological concepts is in almost every case wide of the mark. The fantastic fabric of their interpretations has much ingenuity and some beauty, but is alien to the mind of primitive humanity.

There is a marked difference between the initiation of boys and girls. The boys are primarily (*a*) released from the maternal tutelage and brought into the male world, and (*b*) tested against pain, fear and peril by homœopathy. The girls are often directly instructed and prepared for sexual intercourse and child-bearing, and often marriage follows on their ceremonial initiation.

According to certain primitive beliefs, woman bears children by becoming filled with the mysterious vital substance or ancestral soul. According to Anker-



as the rest of the tribe. She was, it is stated, strictly forbidden to cross the public road or to talk to any man or boy during her periods, *i.e.*, she was unclean. Among the Shushwap of British Columbia, as described by Boas, the girl at puberty leaves her village and repairs to a hut in the hills. She cooks her own food and may not eat anything which contains blood.

The same procedure is observed by the Nootka, another tribe of British Columbia. The girls must use their own bowls and spoons at the period, and for eight successive months they must eat alone. Fig. 432 shows a painted wooden screen, representing the two whales and the "thunder-bird" behind which they take their meals.

Nelson reports that Malemiut (Eskimo) girls are tabu for 40 days after their first menstruation. They sit crouching in a corner, with their faces to the wall, and must draw their hoods over their heads and let their hair hang over their faces. They may only leave the house at night when all are asleep.

Schlagintweit says that the Veddah of Southern India believe that any mistakes



FIG. 432.—Screen, with painting representing Thunder-bird and Whale, used for secluding girls at menstruation. (After Boas.)

or omissions in the ritual imposed at such times would bring fearful retribution from the "tchawns," who are ancestral ghosts of demoniacal character.

According to Krämer, the first menstrual period of Samoan girls is celebrated quite quietly. He writes, "the parents collected finely woven, but otherwise inexpensive mats and fabrics, and invited the *analuma*, or unwedded girls of the village, to a festival; during this festival the mats were given as presents and the daughter of the house received as an *analuma*."

Pregnancy is a great misfortune in a girl who has not passed through her puberty ritual. It is considered that her child must die or be in some way defective or unlucky. The missionaries of New Guinea have given full accounts of the precautions against such misfortunes. Keysser says that the Kai girls are only allowed to leave their special abode for natural needs, and they cover themselves with mats and walk on cocoanut shells or wooden blocks tied to their insteps with thongs; thus they are, as it were, insulated and protected against evil influences. Older kinswomen keep them company and prepare their food, especially a liquid brewed from various pungent leaves and roots and seasoned with salt and ashes, for this is supposed to be efficacious in preventing unwelcome pregnancy. They must also lie or sit on banana (*gong*) leaves and rest their heads on a block of *gong* wood.



A similar custom exists on Yap, according to Senfft. The girl who menstruates for the first time is entitled to demand a cocoanut to sit on so that she shall not come into contact with the earth.

In Cambodia the puberal rites for girls are termed "stepping into the shadow." Sacrifices to the ancestral spirits and a formal announcement to them take place, and a banana tree is planted, of which the fruit may be eaten by the girl alone or given by her to the temple bonzes. She may not look at any male person or eat any animal foods, or go abroad even to the pagodas.

The Gipsy women of Eastern Europe have also a lively fear of "demon births," and, according to Wlislöcki,<sup>4</sup> these may be occasioned if certain sacred springs or hills are tainted by menstrual blood. The demon child is half human, half beast, and terrifies and tortures its hapless mother every night in her dreams.

Fülleborn says of the Wandonde of East Africa that the menstruating girls are fully instructed by older women in the duties of marriage and in sex matters generally. They are also examined regarding their virginity, and if the result is approved there is a feast, and the girl is married to her betrothed, who pays the bride-price in cattle to her father.

The missionary, Merensky, reports of the Basuto that if a boy or girl who has not "gone through the *koma*" should become parents they are slain, as well as the child.

The firm beliefs in some evil emanation from the person of the menstruating woman and in the toxic and magic qualities of menstrual hæmorrhages are common to primitive peoples all over the earth.

To illustrate the matter further, Gentil says that the menstrual seclusion of women in the East Indies is especially strict, and that they remain in a gallery, separate from the rest of the house and eat their meals apart.

Among the Nayar of Malabar, there is a strict tabu of three days' duration, the woman remaining in one room and avoiding contact with children's toys and cooking utensils. On the fourth day, a ritual bath is taken and for three more days she may not enter the temples but may leave the house, *i.e.*, a transitional stage or semi-tabu. The term they use is *viitiidurum* (away or far from home); this is the Nayar woman's reply to requests for food at such times. When the Nayars build a house, there is always a special room for the women's residence during menstruation, birth and the puerperium. In Travancore, states Jagor,<sup>2</sup> the Ranees have a palace of their own.

According to Dubois, the Hindus have a series of graduated stages of "uncleanness" for the successive days of menstruation. The ancient Scriptures relevant to the subject are the *Nittia carma* and the *Padmapurana*. To summarise their regulations. The seclusion is absolute for three days, then, on the fourth, there are elaborate ritual ablutions. But among the endless prohibitions for the recurrent first three days are: she must not weep; she must not mount any horse, ox or elephant or be carried in a palanquin or driven in a vehicle. Neither must she anoint her hair with unguents or play at any games such as draughts, etc., or use perfumes. Neither must she allow herself to fall asleep in the daytime or clean or rinse her mouth or teeth. "Even the wish to cohabit with her spouse is a deadly sin." Neither may she let her thoughts dwell on prayer and sacrifice, nor on the divine sublimity of celestial things. She must not greet any persons of higher rank. If several women who are at the menstrual period find themselves together in a room, they must not hold converse with one another, nor come into contact with one another. Nor may a menstruating mother play with her children or hold them



in her arms. If this period of penance and incarceration has lasted for three days, the woman leaves her seclusion, undergoes the ritual ablutions, puts on fresh clothing and then goes to the river and bathes.

Even among the very primitive indigenous tribes of Northern India, there is an elaborate menstrual tabu. The Gauri, a Sanskrit-speaking people in Northern Bengal, according to Tavernier, have the following custom :

"All women or girls, as soon as their periods begin, retreat with all haste to a little hut standing in the fields and apart and made of branches woven like basket-work with a long woven curtain before the doorway. Therein, so long as her sickness lasts, she is given food. When her time is past, she sends to the priests a goat, a

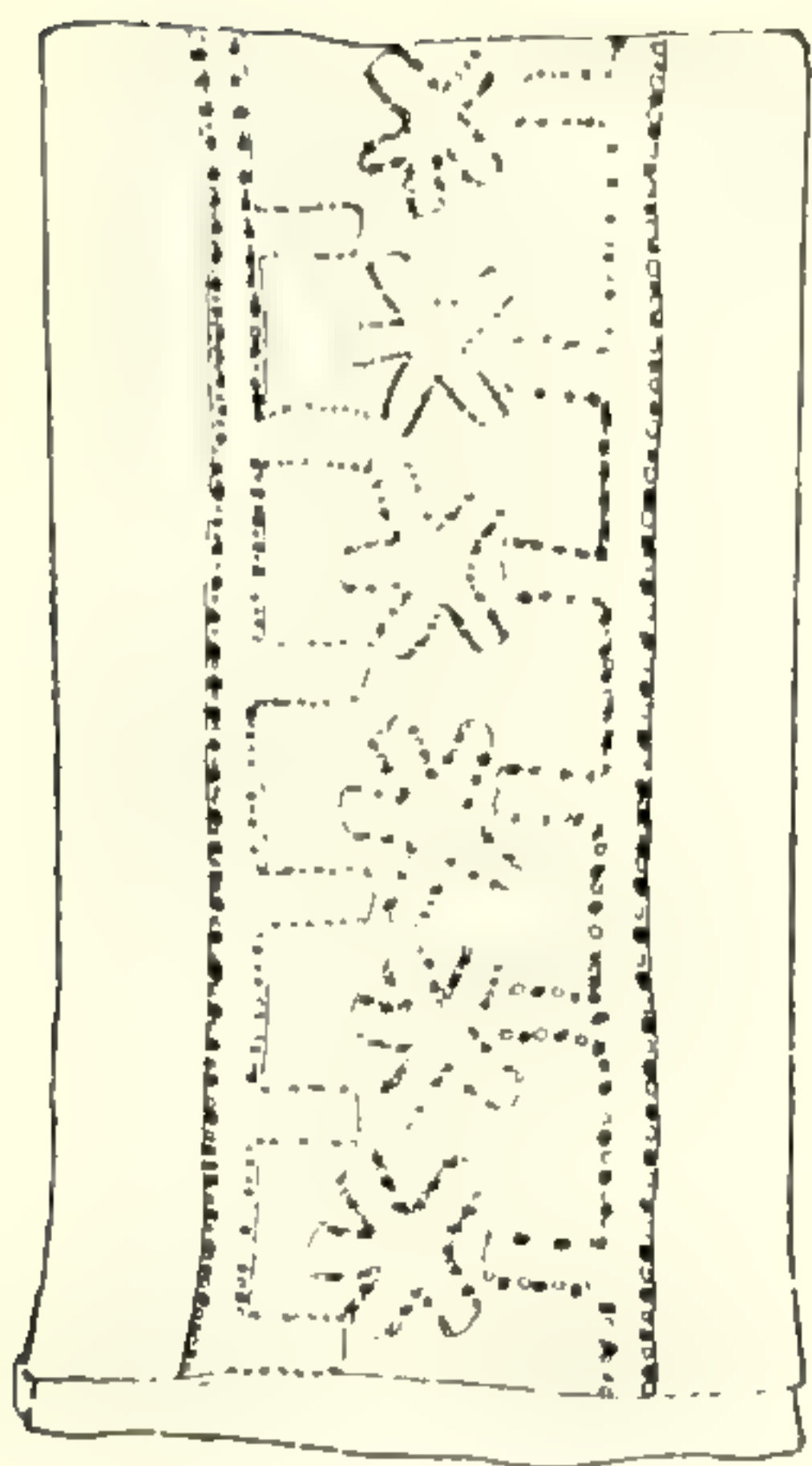


FIG. 433.—*Chit-nort* (Orang-Bélenda, Malacca) showing magical design. (After Stevens.)

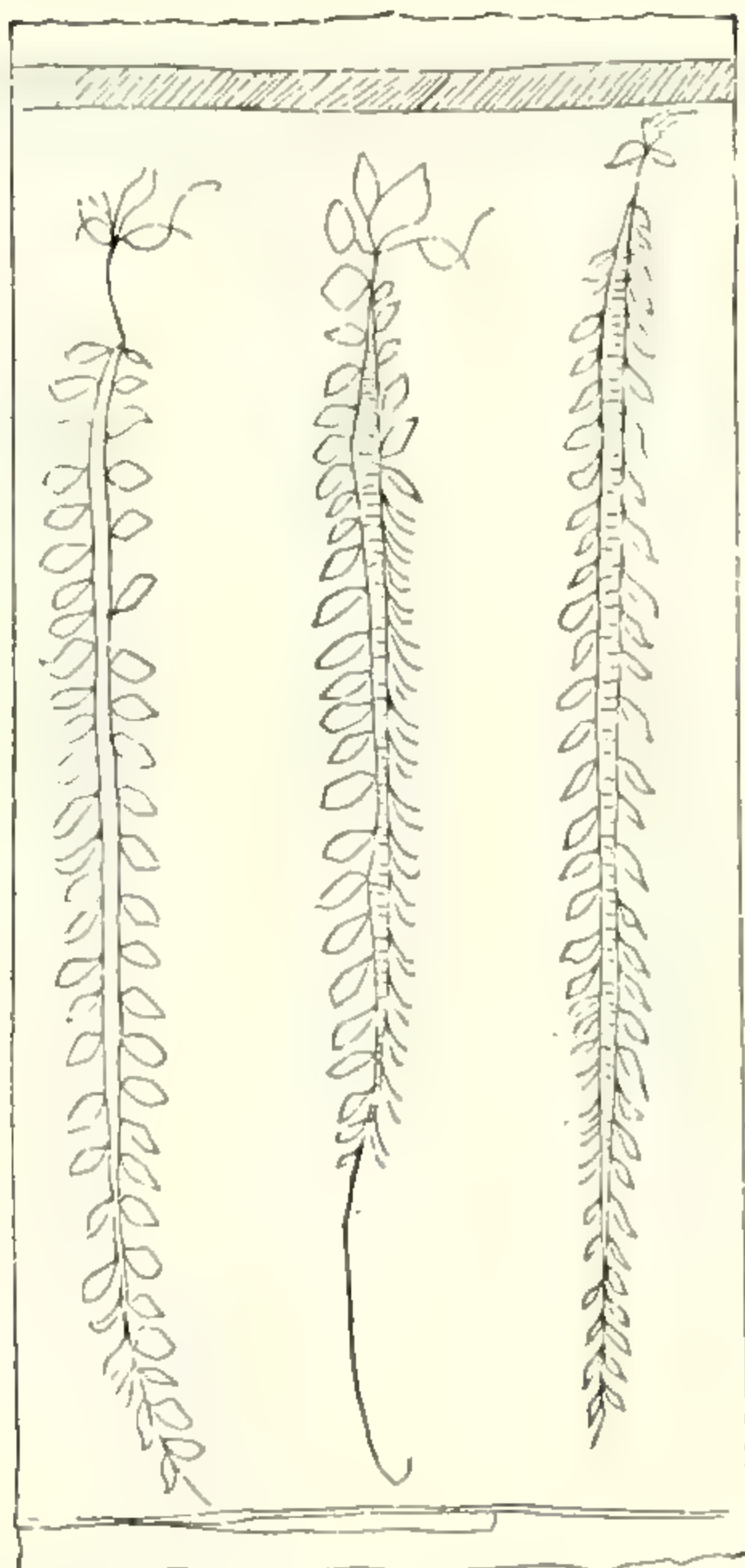


FIG. 434.—*Karpét* (Orang Senoi, Malacca) showing magical designs. (After Stevens.)

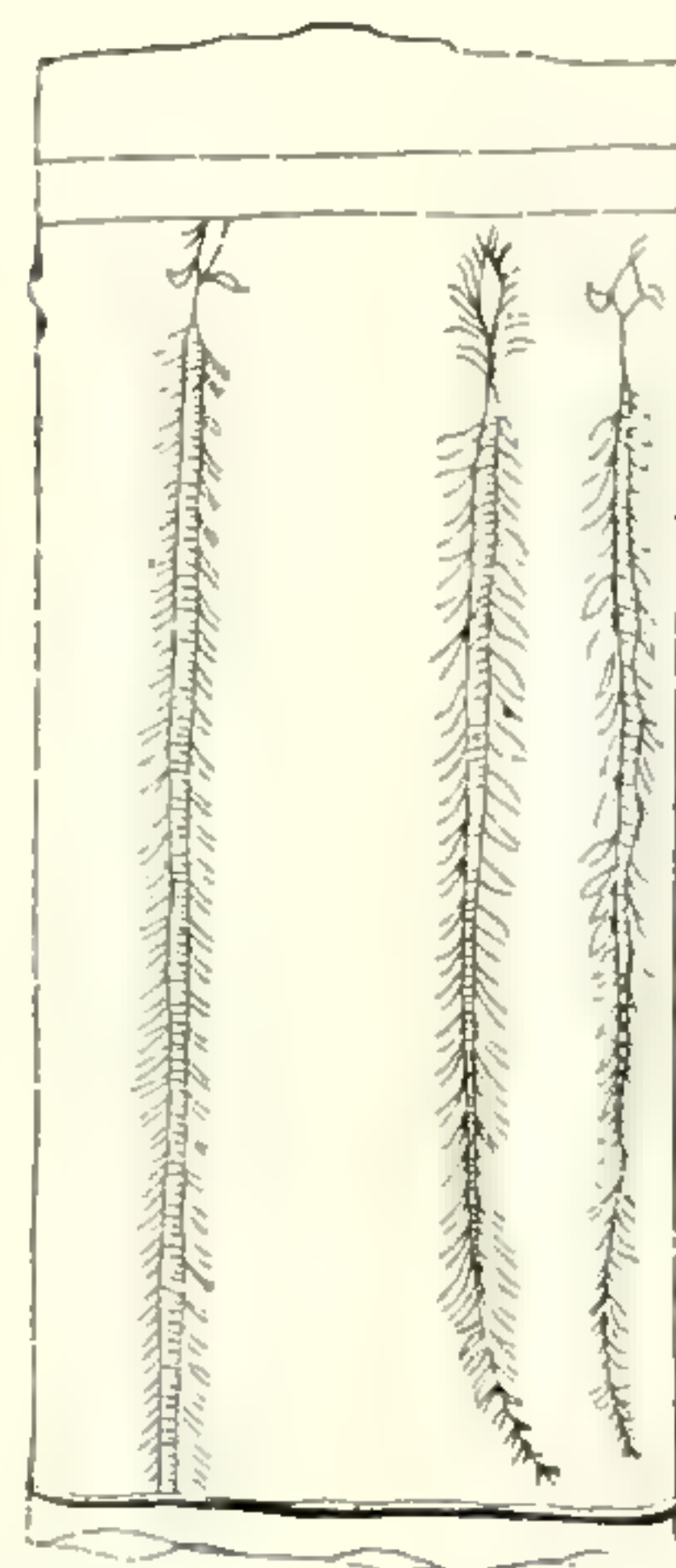


FIG. 435.—*Karpét* (Orang Kěnâboi, Malacca) showing magical designs. (After Stevens.)

pullet or a dove as sacrifice. Then she bathes and summons her kinsfolk to a meal which she prepares."

The same customs of special seclusion during menstruation and a religious or ritual "purification" combined with a sacrificial gift to the priests exist in the Hindu Kush. But Jagor found that the Badaga of the Nilghiri hills only secluded their girls on the first occasion.

Vaughan Stevens has given particulars of the customs of the Orang hûtan of Malacca. We learn, for instance, that the girls and women of the Jakûn were not permitted to light or tend the camp fires at such times. Among the Orang Lâut they may not drink out of the same water vessels as the men and, among all these tribes, they may not cook or prepare food for the men. In practice, however, this means that they may dig up the roots which the men then peel and prepare. The Bélenda women remain at home and some shut the doors, but their husbands may enter and the women are not sequestered.

These women have definite rules about ablution and post-menstrual purification. They wash their genital organs and lower limbs in water carried in specially capacious bamboo tubes or cylinders, known as *chit-nort*, which are painted with



mystic designs (Figs. 433-435) to avert mischief from the evil spirits and spectres or *hantu*. The midwives or wise women draw these patterns by means of little wooden knives, serrated like saws, such as they also use to sever the umbilical cord of the new-born babies. The patterns of the *chit-nort* used by unwedded girls are different from those used by the matrons. The main *motif* is a flower which, according to tradition, grew freely in the original home of these peoples and was wont to be mixed with the water for these ablutions. It destroys blood. If it is not portrayed, the evil *hantu* or *hantu-Dârah* (blood-goblins) enter the woman's body and make her ill or unable to bear healthy children.

The men of these forest tribes were very reticent about the *hantu-Dârah* and



FIG. 436.—Chevsur women and their menstruation hut. (After Radde.)

referred Stevens to the wise women. The *chit-nort* are hidden from the men and no Bělenda man would touch one. The Orang Laut women told Stevens that their menfolk believed that coitus or even contact with a menstruating woman would damage their virility. The name given to the *chit-nort* among the Bělenda is *karpet*. The allied stocks of Bělenda, Orang Senoi and Kĕnâboi have the same utensils with different designs (cf. Figs. 434 and 435). It is significant that there are different designs for girls and married women in all these tribes.

In Northern China, states Grube, especially in the Peking district, women and girls are in the habit of wearing a large ring (known as *chieh chih* or "ring of warning") on their finger during menstruation, thus definitely, though silently, indicating their condition.



Among the Chevsurs of the Caucasus, the menstruating women have to dwell apart in remote huts of slate known as *samrevlo*. They wear their oldest and shabbiest garments and, if the sun shines, they sit on the low roofs of the huts and devour an immense amount of raw herbs and green stuff, chervil especially, and all varieties of thyme. These are eaten uncooked and unsoaked in their natural condition and a considerable quantity of sour milk is sipped. They are not, however, considered too "unclean" to milk the cows and take them to the stables. Before returning to their homes they perform careful ablutions. These particulars are furnished by Radde, to whom we are also indebted for Fig. 436.

The Samoyedes regard women as thoroughly inferior creatures but as actively noxious during menstruation. They must then step over fires and fumigate themselves with the acrid smoke of burnt reindeer fells or other skins. Pallas states that they may not cook or serve any food to their men.

On the Aleutian Isles, before the introduction of Christianity, the women and girls had a full week of menstrual seclusion. Captain Zagoskin saw girls with faces blackened with paint or soot sitting behind a leathern curtain in a tent in 1842, during his sojourn with the Athabascans. G. A. Erman gives three days as the time for seclusion for women among the Tlinkit.

Nelson records that the Eskimo of Berings Straits regarded a girl as tabu during her first menstruation. Among the Kuskwogmiut of the Lower Yukon, children were often affianced and lived together in the house of the bride's father. At her first menstrual period, not only the wife but her husband as well, were secluded and might not share in the household tasks for a month.

In Indonesia the native women use tampons, balls or pads of soft vegetable fibre which are inserted into the vagina, and they also avoid coitus. On the islands round Ceram Laut they not only avoid coitus but social converse with men is not allowed at such times. Nor may the women dye thread or fabrics, help with the fishing, or visit gardens or plantations. On the Aru Islands the women are secluded from male company and may not plant, cook or serve food, or take any baths until menstruation ceases.

The so-called Alfures (Halefoerœ) of the hills in Ceram send their menstruating women away into the forest. But, according to Captain Schulze, every village on that island has its special house in which they are secluded from men and children throughout menstrual periods.

Very similar ideas and customs prevail elsewhere. Mertens records them in Micronesia (Carolines, Marshalls, Gilberts and Marianes) and others testify as regards almost the whole of Polynesia. On Yap both v. Miklucho Maclay and Senfft reported the seclusion of women in special huts at a distance from the villages, and these huts in the chief villages were in the districts of the Milingei or villages of second or subordinate rank. This is a further indication of the trend of thought associated with the idea of uncleanness in menstruation.

Brandeis found that on Nauru Island the women were often left without food during their sequestration.

The Australian natives, according to Schürmann, regarded his womenfolk as tabu for a week at their periods, and they were secluded in a hut apart, and the same is reported by de Rochas about the native women of New Caledonia.

Roth<sup>5</sup> reports that the Queensland natives allow their young women to remain in the camp after the third recurrence of the period, but she must avoid her husband's fire and light her own and proclaim her inability for coitus by carrying a large basket



of shells on her back. At one time the Queensland natives considered menstruation a source of fatal infection to men.

There are many records of seclusion at menstruation among the North and South

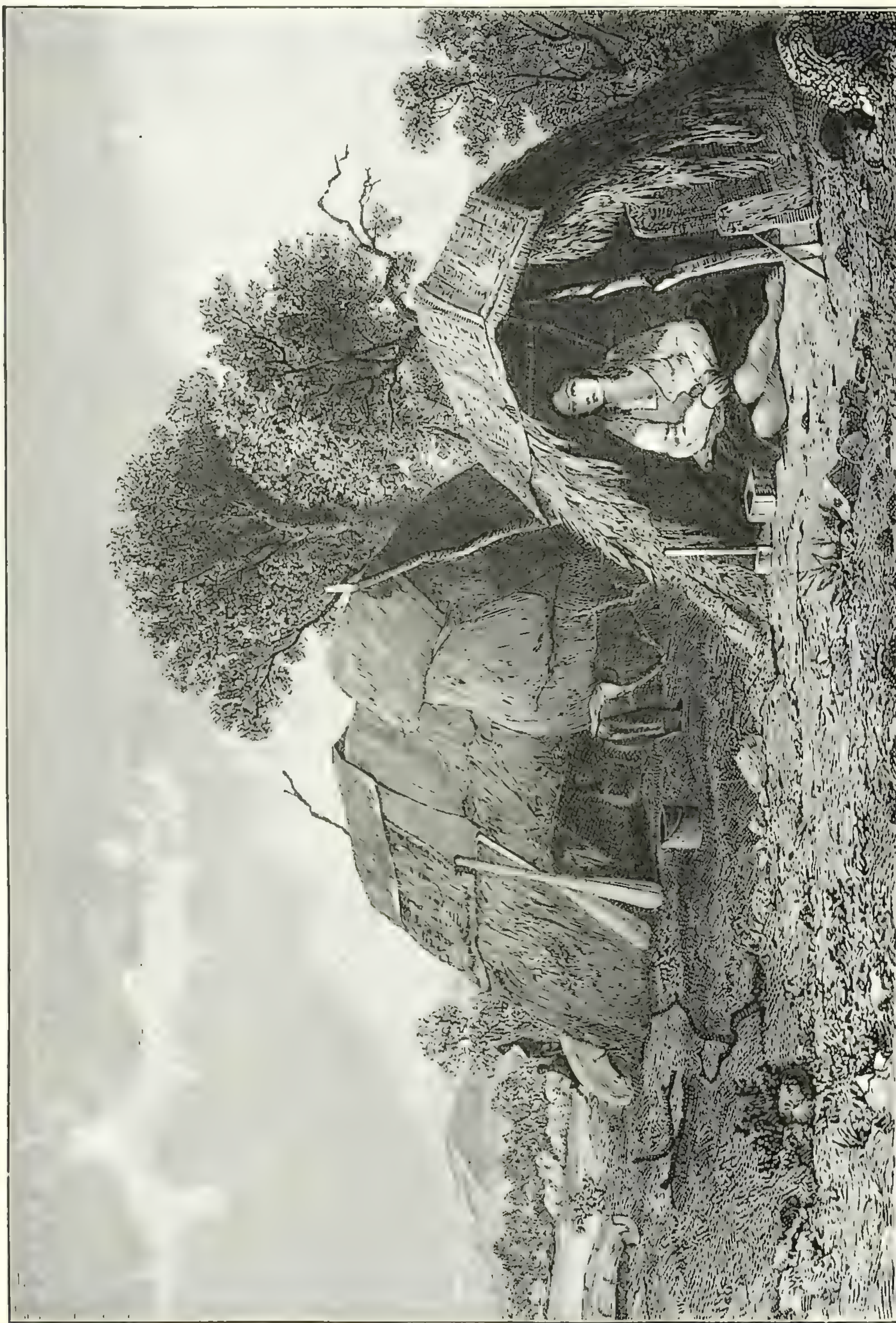


FIG. 437.—Tent used among the Indians of North America for secluding women at menstruation. (After Schoolcraft.)

American Indians; sometimes this is limited to the first occasion, sometimes it is recurrent and lifelong.

Testimonies are not lacking to the rigid seclusion and rules of decorum observed



by the North American Indians under tribal organisation. Coitus and even slight contact was avoided, and the women lived in huts or tents apart during the period. Carver is the authority for the Dakota; and Sir J. G. Frazer ("Golden Bough," X., 56 ff.) has devoted a section to this subject. But among the Omaha and Ponca, who practised a strict separation even from the table, the use of special bowls and spoons at this time is vanishing through the influence and example of the whites.

Grinnell describes typical hunting and fighting tribe tabus among the Cheyenne; the women might only eat food roasted in the warm ashes, and might not eat or sleep with their husbands for fear of bringing ill-luck in chase or foray. They might not touch any weapon, gun, knife or bow, and if they ventured into a special hut where sacred bundles were left, they were expected to be smitten with fatal hæmorrhages.

We have mentioned some of the Northern tribes and the Eskimo. The Athabaskan Ahtena Indians and the Thlingchadinne (Dog-Ribs) are said to have recourse sometimes to "menstrual" seclusion in order to escape their husbands' evil moods. Jacobsen speaks of seclusion from meals among the Eskimo of the Northern Pacific slope and others of the same rule among the Indians of Stuarts Lake and Fraser River in British Columbia.

Morice, moreover, relates that among the Athabaskan Indians, the girl at her first catamenia, must suck up water or other liquid from a bowl through a tube or pipe of hollow swine's bone.

Boas confirms the seclusion among the Nootka and says that the Shushwap women are forbidden meat at the period and must subsist on roots, and live apart from man, otherwise the bears he hunted would slay him.

Throughout primitive Africa we find these ideas and customs of menstrual seclusion in various manifestations. The Ibo negress of Old Calabar is forbidden, states Hewan, to leave her home at the period and must sit on a specially constructed chair resembling an old-fashioned "commode." On the Guinea and Ivory Coasts, for example at Issini, there are, according to Loyer, special huts some hundred yards or so from the rest of the buildings. The women and girls retire to these buildings and their food is brought to them there. In parts of the Congo the menstruating woman is, according to a statement by Degrandpré, secluded most strictly for six days; if anyone should catch sight of her, she is further secluded for another six days. Afterwards, she cleanses her body all over with red earth and then with water.

The Kalunda, who inhabit the southern half of Congo, also observe the seclusion tabu. Pogge states that the wives of the wealthy men and chieftains retire to their special abodes at such times, accompanied by a whole retinue of female slaves.

The terms used by the Ewe negroes of Southern Togoland for menstruating women is *gbototesitri* or *dudatsitsi*—"stay apart from the village." This, as Spiess<sup>4</sup> says, suggests the idea of uncleanness and the necessity for seclusion.

Granville records that the natives of the Warri districts, on the Niger coast, leave their husbands' houses at menstruation and must use bye-paths as they go about the village and not enter or leave by the main gateway.

Pechuel-Loesche mentions the separation from homes and husbands during the period among the Bakongo of the Loango Coast. He also informs us that the women pound a vegetable product from a tree growing in the Majombe district into powder which is called *takulla*, and colour their bodies red with this substance. Moreover, they practise extreme cleanliness by extensive bathing and washing, and appear generally to suffer very little at the menstrual periods.



Among the Wandonde (East Africa) the women may not cohabit with their husbands or eat with them out of the same vessel during menstruation. They have to fold a large leaf together and drink water from it as from a funnel. Nor may they follow in the footsteps of any men. They may not bathe during menstruation, but at the end of each period, states Fülleborn,<sup>2</sup> there is a ritual bath and purification conducted by a medicine woman.

De Rochebrune, in describing the Wolof women, states that they wear a distinctive scarf, shawl or large handkerchief crudely and brightly coloured, folded triangularly and knotted loosely across the breast. This is a sign of their condition.

The Azimba women of Central Africa wear pads or lumps of soft vegetable fibre as bandages. These are held in position, according to Angus, by a soft oval piece of goat's skin and a twisted thong.

We have analogous accounts of the customs of the indigenous races of South Africa.

There are several independent testimonies as to the periodic seclusion of the Hottentot women. It was noticed during the *Novara* voyage that among some tribes a special pattern, resembling a pair of spectacles, was painted on their faces as well. Alberti mentions the rigid separation of the sexes among the "Kaffir" women, and Le Vaillant, speaking of Hottentots and Gonaqua alike, states that the women retire at once to a special hut set apart, or build one for themselves and remain there till menstruation ceases. They then have a ceremonial ablution. He believed that the æsthetic motive, the wish to please and the fear of exciting disgust is very strong among these peoples.

Holub mentions a seven-day seclusion of wives among the Makololo and other Marotse peoples on the Zambesi. The curious cone-shaped structures in the palace precincts are the menstrual abodes of the chieftains' harem and of the princesses.

We find similar customs among the free "Bush negroes" whose ancestors were transported as slaves from Africa to Surinam. The women, writes Riemer, are debarred from social companionship and converse even with their own sex. They must leave their husbands' huts until they have recovered and must particularly avoid turning their backs on or walking before anyone. They must call aloud "*mi kay, mi kay!*" ("I am unclean").

Pliny himself believed and perpetuated the belief that the very approach of menstruous women to new wine or ripe fruit caused these products to ferment and become uneatable, the seeds in the garden to become withered and if they stood or sat in the shade of a fruit tree, the fruit fell to the ground. Their reflection tarnished and dimmed mirrors, and rusted and blunted the blades of steel. Metal objects became covered with rust and malodorous and if dogs licked such objects, they became rabid and their bite fatal (*Nat. Hist.*, VII., 64 ff., XXVIII., 77 ff.).

The laws of Manu are specially emphatic in warnings and prohibitions on the subject of menstruation. Intercourse or even contact between spouses at such times "destroyed the man's brain, energy, eyesight and manhood." Similar ideas are crystallised in Moslem texts and traditions.

Among primitive races these ideas have led to murder. Thus, in Townsville, in 1870, an Australian native is reported by Armit to have killed his wife because she had wrapped herself in his blanket when menstruating and he feared some evil might result.

Special fears are entertained by primitive peoples for their hunting gear and weapons. Morice relates that Captain Back was appealed to by an Athabaskan Indian squaw with a six-year-old child who had stepped over her husband's rifle



by mistake in the dark when she was at her period. The woman was in acute terror and begged for protection. Shortly after the accident, however, the hunter fortunately shot a deer with his rifle and she could return to him without hesitation. If his hunting had been unlucky she would have risked mutilation and the loss of an ear or the tip of her nose, according to the accepted code of her people.

Among the Guaiqueri of the Orinoco Gumilla states that it is believed that the ground on which a menstruous woman urinates will no longer be fertile. If a man urinates on the same spot then will he suffer from a swelling of the thighs.

Roscoe reports the menstrual superstitions of Uganda. If a woman at her period touches her husband's gear and implements, he falls sick ; but if she lays a hand on his weapons he will be slain in his next fight.

In Bari (Southern Italy) Karusio states that menstruating women are forbidden to pickle under a cherry tree, otherwise it is believed that the tree will go rotten ; and their mere presence in a house at such times prevents milk from setting into butter or cheese, as required. The superstitions in Belluno and Treviso are even more extreme. It is believed that grass withers where the woman treads, and if her husband sleeps beside her he has severe lumbago. Moreover, all the soiled under-linen is carefully packed and washed separately (Bastanzi). Among the peasants of the Po, the menstruating woman may not, according to Mazzuchi, visit or help any nursing mother or the milk would dry up.

H. von Wlislöcki<sup>4</sup> states that among the gipsies of Eastern Europe the woman at such times may neither bake bread nor make pickles, nor churn butter nor spin thread, "for they would all go wrong."

Similar beliefs have been current for centuries among the peasantry of Germany. Saint Hildegarde declared that it was particularly fatal to vegetation and noxious to wine, pickled vegetables and fruit of all kinds.

"Faithful Eckarth," moreover, the popular obstetric writer of the early eighteenth century, was very emphatic on the "dangerous and poisonous" nature of the menses.

In 1610 Guarinonius gave detailed advice to women on menstrual hygiene and precautions in doggerel verses. His injunctions were that the young girls should not frequent balls and festivals at such times, and that the wives should keep away from contact with their husbands. They should not "whine and whimper," nor "lay about them," in anger, or "the poison" would "strike up" into their limbs and make them crooked. They should avoid caressing or touching babies and young children, not prepare any cooked food themselves ; not enter the wine or beer cellars, nor serve these drinks. They should even avoid the neighbourhood of vineyards and young fruit-trees, "nor look into their mirrors." But they are admonished to "sit at home quietly sewing" and take care of themselves and not be too sparing of "cloths of linen" as a necessary precaution. The superstition about wine cellars is old and widespread. Certain emanations or exudations are supposed to turn the precious liquid sour, and this superstition is extended to all stewed or distilled liquid products, jam, jellies, sauces and cordials. Wuttke testifies to this belief in Silesia, and Schleicher in Meiningen. Silesian folklore forbids the woman to plant seedlings at her periods or to do garden work. In Swabia there is a superstition that intercourse during menstruation results in a discharge resembling gonorrhœa in the male partner.\* This belief is also held in Northern Germany by peasants and unskilled labourers.

\* See Van de Velde<sup>1</sup> for an explanation of this idea.



On the Rhine, throughout the vine-growing districts (according to a communication of W. Joest to M. Bartels), women are debarred from approaching or handling the vessels in which fermentation takes place, "for should their courses begin, fermentation would be accelerated and the wine spoiled." There is also a superstitious fear of injury to baked bread or sausages.

The wine taboo is mentioned in the Talmud (*Midrash Wayyiqra*) in the tale of Rabbi Gamliel and his maid-servant Fabritha (see Wunsche<sup>3</sup>).

The belief in the toxicity or poisonous properties of the blood lost during menstruation is very ancient and deep seated. In the eighteenth century it was vehemently maintained by learned doctors of medicine; for instance, by the court surgeon of the Great Elector, Timæus von Güldenkle, whose work was published in 1704 by Coschwitz and expressed superstitions and advocated remedies now practised by the most backward European peasants.

The gipsy habits and beliefs about menstruation are extremely primitive. Menstrual blood is used as a poison, and if mixed with earth and strewn in food, is believed to deprive a detested husband or recreant lover of genital potency and to inspire hatred of the object of his desire.

Schurig, in his "Parthenologia," states that mixed in wine, menstrual blood made people moon-struck or turned them insane and "mad with love." We shall refer again to these particular beliefs.

In the Königsberg district of East Prussia, among the countryfolk, Hildebrandt mentions that if a girl's period falls on the day of her betrothal it is a sign of ill-luck for life.

Among many primitives, the evil emanations of menstruation are feared as much as actual contact. Boas tells us that the Songish aborigines of Vancouver forbid women to tend or approach sick men or children at such times. Nelson records the belief of the Unaligmiut of Bering Strait that the first menstrual period is especially perilous to any man who comes near the girl: he becomes easily visible to the animals of the chase, and as a hunter he has no further luck. Riedel<sup>1</sup> mentions similar beliefs on the island of Eetar, in the Eastern portion of the Malay Archipelago. The girls are secluded in tents, and these tents are carefully avoided. The same ideas prevail on the Watubela Islands. Omaha and Poncka Indian women are supposed to infect children with acute inflammation of chest, lungs and throat, so that their lips wither, their blood turns black and they vomit convulsively.

It is probable that special precautions (and possibly special ceremonies) are observed in disposing of the discarded bandages and necessary occasional garments, but very little is definitely known about this. We learn, however, from Goldie that the Maori women use as pads (which they call *kope*) clumps of fine soft moss (possibly *Hypnum clandestinum*), which are crushed up and pressed against the vagina and are then burned secretly in the woods. Each woman has her own "burial place"; and any intrusion on her privacy in this matter would be considered so grave an insult that her humiliation would probably lead to suicide.

Among the Kai of New Guinea there are similar customs, and not only in respect of menstruation, but also of the placenta after birth. The missionary Keysser gives a curious account of primitively logical animism here. If the wild pig of the islands were to find and devour any such objects, it is feared that they would visit the fields and plantations and devastate them; for the *mana* of the women, whose daily duty it is to visit and dig in the fields, would pass into the pigs' bodies, and if this occurred often the animals would die.



### 3. THE SECLUSION OF GIRLS AT MENSTRUATION

#### (a) Converse with the Tribal Ancestors

The puberty candidates for full tribal membership were probably originally led into the depths of the forests. But a later stage elaborated further ritual and caused special huts to be built.

Velten mentions that the Swahili call the girl who undergoes her first menstrual period, the *Mwari*. She is given into the charge of an elderly woman, a *kungwi*, who acts, as it were, as a *midwife* to her new phase of life. In the house of the *kungwi*, the girl stays for a length of time variously computed from one month to twelve. The *kungwi* bathes her young charge daily with cooling water and instructs her in knowledge needful for future occasions.

Zache confirms Velten's account and supplements it as well as giving additional material to the brief notes of other writers. He says that every Swahili settlement or town has a special building known as *kumbi*, to which girls are conducted on the first appearance of the menses, and where they remain in ritual seclusion for three months. They are conducted to the *kumbi* after nightfall. The building is large enough to house about 100 persons; for the first 24 hours after arrival the girls abstain from food. Then their mothers bring them victuals to the *kumbi*, while "a sort of godmother," ripe in years and knowledge, protects and instructs the little maidens in all that it is most necessary for wives and mothers to know.

The Wandonde of East Africa have special maturity rituals for girls, and a reliable native witness gave some particulars to Fülleborn.<sup>2</sup> The girl who menstruates for the first time is taken to a special house where she remains for about two months. She may not leave it before the appointed time, but her playmates and companions may visit her, both girls and boys, excepting the boy she especially favours.\*

The Queensland aborigines seclude their daughters at the first menstrual period for five days; the Barolong (a Bechuana tribe) for between two and three months.

There are various accounts of Melanesian puberty seclusion. Powell gives the time as four weeks in New Ireland and says that the girl is shut into a cage-like structure or annexe to her home and hung with fragrant wreaths round her shoulders and hips. This "cage" is generally two-storied; the girl is in the upper room and a child or old woman inhabits the room below. The girl's quarters are so extremely small in all dimensions that she cannot stand upright, but must sit or lie. She may only leave her cage by night while her seclusion lasts.

Hahl's account also refers to New Ireland and differs in some important particulars. He says that the "little house" or *mbak* is built as a part of the large women's quarters. The girl is kept there hidden from the public gaze and may only emerge at night. She must squat or crouch so that her condition is not perceptible and must remain in the *mbak* for 10 months. He adds that the elder women, who look after her, are entitled to bring any of the men of the community, married or single, whom the girl prefers, to the *mbak* and she has intercourse with them. But, when she leaves the *mbak*, this promiscuity ceases and she keeps herself from all but her betrothed husband. Parkinson<sup>2</sup> says the seclusion may last from 12 to 20 months. The freedom from hard work and the shelter from the sun's beams make the girl plump and lighter in complexion, and both of these characteristics are considered highly attractive (Fig. 438).

\* Weule has given detailed accounts of East African puberty rituals with some original photographs. These festivals are termed *Unyago*.



v. Miklucho-Maclay gives the term of seclusion on Yap (Caroline Islands) as from two to three months ; the girl repairs to a special hut, apart from the village, but at no great distance. Senfft's account is more precise. According to him, the girl inhabits first a distant hut, and then, three days after, at the first menstrual onset, she returns and takes up her abode in a little hut built specially for her by her father. In this she sleeps for 100 nights in succession, attended by a woman from the *millingri*, a village which is inhabited by people of low caste. When the 100 nights have passed, the girl may re-enter her father's house.

Erdland gives a picturesque account of the festivities which followed the week of seclusion when a chieftain's daughter on the Marshall Islands reached puberty. "All the subjects throughout the atoll came bringing food, flowers and mats as gifts," he writes. "The girl had the half of a roomy special hut near the beach of the lagoon reserved for her. The lesser half of this building was occupied by the



FIG. 438.—Hut for secluding a girl at menstruation. (After Parkinson.)

sorceress or wise woman and by various friends of the chieftain chosen by their families as a special honour ; those favoured guests included both men and women. They were known as *rubik in kabit*."

According to Parker, the Chippewa girls had to leave not only their parents' wigwam but their village as soon as menstruation began for the first time, even if it were midnight in midwinter or a blizzard were raging. They made their way to a little hut in a lonely place not far from the village. The hut was made as comfortable as possible for them and they remain there alone for some days and nights. The families bring food, but nothing cooked.

Canadian and British Columbian Indians also seclude their girls at puberty. The Nootka girls are relegated to the flat roofs of the dwellings and there is a feast in their honour. Koluschan Indians seclude their girls for three months, according to the season, in a bower of leaves and branches or a house of frozen snow. Formerly the seclusion lasted for a year.

G. A. Erman and others give similar accounts of the tribes on the Bering



Straits. The Tlingit shut up their girls in huts, or rather hutches from 6 to 8 ft. high, and smear their faces with soot. Here, too, this time of trial was originally a year and later reduced to three or six months.

Danks gives a detailed account of the very prolonged seclusion of the Melanesian girls on New Britain. The missionary Romilly confirms Danks' account and gives further details of a festival which inaugurates an incarceration of about five years' duration.

Romilly describes the "ceremony of caging" as described by an eye-witness. The poor little girl was laden with necklaces and chain belts of glass beads, red, white and blue, and looked very frightened. In the forenoon she had been elaborately tattooed in the painful native manner. A part of the ceremony was a very vigorous fight between the adult women of the two groups to one or other of which the native population of these islands belongs, the *Maramara* and the *Pikalaba*. These contended for the honour of guarding the captive in her seclusion. After having hurled every and any missile they could lay hands on, the victorious women made a rush at the house in which the girl was "caged," and there was a furious general *mêlée* in the narrow doorway of the house.

The Rev. G. Brown, as quoted by Danks, was able to obtain permission to visit these strange temporary prisons in New Britain. He had to overcome great reluctance on the chieftain's part, disapproval from the guardian duennas and, finally, extreme timidity on the part of the girls themselves, as the huts, which are situated deep in the woods, are absolutely *tabu* to the male sex, even to the fathers and brothers of their inmates. The building was about 25 ft. in length and surrounded by an enclosure of reed and bamboo. Across the entrance hung a bundle of dried grasses, a sign of most solemn and complete *tabu*. In the interior of the building were three conical structures about 7 or 8 ft. in height and from 10 to 12 ft. in circumference at the base. These cones tapered to a point at the roof, and were about 4 ft. above the surface of the ground. They were so firmly sewn together from the wide and tough leaves and bark of the pandanus-tree that no light and a very minimum of air could penetrate into their recesses. They had each one narrow entrance closed by a double door of plaited cocoanut-tree and pandanus-tree leaves. In each of these structures was a young woman, who would not be released for a term of from four to five years.

Brown succeeded in persuading the old female guardian to open the cage doors, and the girls peeped shyly forth and held out their hands for the glass beads he had brought as presents. But he stood at some distance so that they were obliged to creep out of their cages, and the old woman helped her charges to circumvent the *tabu* on putting their feet to the ground by putting pieces of wood or bamboo as stepping stones and holding the girls' hands so that they could walk up to Brown and receive the coveted beads. He also examined the interior of the cages. The atmosphere was oppressively hot and close, but the little cells were perfectly clean and quite without furniture except a few short lengths of bamboo for holding water. The girls had no room except to sit on the floor or to lie in a crouched position, and when the doors were closed the cages must have been quite dark. The ritual routine was said to allow these women to come out of their cells once a day and wash themselves all over with water in a large wooden vessel. The heat of the cages evidently caused strong and frequent action of the sweat-glands. The girls entered the cages quite young and remained there till they were "young women," and, on their release, each one had a great "marriage feast" prepared for her.

One of these girls was between 14 and 15 years of age and her release was



imminent. The other two were between 8 and 10. It was said that no deaths of girls had been known to occur while they were thus immured.

On the Western Coast of the islands, the period of seclusion is much shorter and less rigorous. It may be added that Danks himself never set eyes on any of these cages during the whole of his 10 years' sojourn in New Britain.

Nelson confirms the menstrual seclusion of girls among the Malemiut and Unaligmiut. He adds that this period of seclusion is now much shorter than



FIG. 439.—Women of the Gold Coast wearing the "otufo" dress at sexual maturity.  
(Photo, A. Holm.)

formerly. The girls are provided with wholly new clothing and permitted to marry on their release.

Captain Jacobsen gives 30 days as the term of seclusion for girls at their first menstruation among the Indians of the North-West Coast. The seclusion takes place in a special room in their homes, not in a separate building. They eat very sparingly and their food is specially prepared. When they emerge, they receive a new outer garment and gifts from their parents, and they are given in marriage shortly after this "coming of age."

In South America we find similar concepts and customs. Burmeister describes the strict seclusion of girls among the Coroado Indians of Brazil at their first menstruation. They are shut into a sort of case or cupboard made of tree bark.



Among the Passé, the girl fasts for a month, lying in her hammock in the upper chamber of the hut. The Arawak of Surinam shut up the girl for three weeks in a special building on the first occasion, but she is guarded by her own mother and not by a special official. A great feast is celebrated on her release and there follows a second seclusion of a month, but less rigorous than the first (see van Coll).

On the Gold Coast of Africa menstrual, or, rather, puberal seclusion lasts for a long time. The girls retire into the forests where they remain as it were in hiding (see Figs. 439 and 440).

When the young Melanesian girls of New Ireland leave the *mbak* a great feast is set before them by the men of their tribe and a special wooden stand is set up for each girl on which food is served to her. These feasts are called *gutpok*; and are followed by ritual dances (Hahl). Parkinson mentions puberal feasts on the Admiralty Islands.

Lehner ascribes two months' isolation and seclusion to the pubescent girl among the Bukaua (cf. Neuhauss<sup>2</sup>). Her kinswomen tend her health and pay particular heed to her looks, especially her hair. On the whole, the ceremonial procedure is that of the Kai, which we have already recounted (Fig. 441).

Among certain hill tribes in India (the Kadir of the Anaimalai and the Badaga of the Nilgiri Hills) there is isolation and seclusion at the first period, but it only lasts for three days and is not recurrent. On the other hand, Jagor states that the girls are *tattooed* with great ceremony.

The partial interment of menstruating girls is an extremely curious and significant custom.

Among the Australian aborigines of Queensland on the Pennefather River the girls are led by their mothers from the camp to an enclosure, where there are shady trees. The mother draws a circle on the ground and digs a deep hole into which the girl steps; the sandy soil is then filled in, leaving her buried up to the waist. A woven hedge of branches or twigs is set around her with an opening towards which she turns her face. Her mother kindles a fire at the opening, the girl remains in her nest of earth in a squatting posture with folded arms and hands resting palm downwards on the sandheap that covers her lower limbs.

Vortisch has furnished us with an interesting account of the Krobo (Gold



FIG. 440.—Krobo girls (West Africa, Gold Coast) wearing the ceremonial dresses at the first menstruation. (Photo, H. Vortisch.)



(Coast) customs in this respect. The girls at puberty were secluded and instructed in a City of Tombs. Vortisch says :

"Ceremonies vary according to the locality. For example, in the districts of Kroboland, lying to the west of the Volta, customs were formerly as follows, before the Government intervened.

"The maidens chosen as 'brides' were sent to the Krobo Mountain. This mountain rises from the surrounding plain and is provided with a kind of deep natural flue. In its crater there was at one time a city in which the natives buried their dead beneath their houses. The

crater was also used for great festivals and fetish worship and for the initiation of girls at puberty. During those ceremonies, the girls wore high cylindrical head-dresses but were otherwise quite naked, even when they made visits and expeditions to their native villages. If these girls were found to have had sexual relations with men, they were flung down the flue of the volcano. The natives are now forbidden access to the mountain and their ceremonies and customs have become somewhat milder."



FIG. 441.—Ornaments worn at initiation. Bukaua, New Guinea. (After Neuhauss.)

The Bakongo of the Loango coast take the girls to special remote huts, the daughters of wealthier persons and chiefs each in her own hut, but the daughters of the less prosperous majority together in one building. They are known as *ukumbi* or *tchikumbi* until they marry. They are instructed by a woman whom the parents choose for duty and, states Pechuel-Loesche, there are final ceremonial ablutions.

Wolff<sup>3</sup> mentions the seclusion in huts among the Kabinda people near the mouth of the Congo. The ceremonies of initiation take place on the seashore. In the folklore of all races there is a special association between sexual maturity and the watery element with its guardian spirits.

Ceremonial ablutions are an essential part of nuptial and puberal rites. According to von Reitzenstein<sup>13</sup> there seems to be a double purpose here : (a) purification or cleansing (the obvious purpose), and (b) some idea of aiding and promoting fertility ; the "womb" (imagined as an independent entity with power of locomotion) is supposed to "fetch" or swallow the seeds of life in the element where they lie ready to be incarnated.

These ablutions are mentioned by Keysser among the Melanesian Kai of New Guinea, and by Erdland on the Marshall Islands.

The Veddah of Southern India seclude menstruating girls in special huts for



five days. Then for another five they repair to other huts, half-way nearer their homes, and there are daily ritual ablutions. On the tenth day they are fetched from the hut by their sister and their husband's sister and solemnly conducted to a ceremonial bath. Person and garments are washed, her body rubbed with turmeric, again washed, and finally anointed with oil. Then her escort leads her back to her home.

Beuster states that the Bawenda of the Northern Transvaal have the custom of leading the girls to rivers or waterholes where they remain immersed for hours at a time, regardless of the season of the year. The women beat drums to scare away intruders.

Trees, as well as rivers and springs, are associated with reproduction in primitive belief. Velten tells us that the Swahili girls have a great dance festival at the end of their seclusion in the kumbi. They are carried after nightfall on the backs of older women, and the dances are performed around the *muyombo* tree.

Painter says that among the Arrians, a hill tribe of Travancore, the girl treads on a board of Jack-wood (that tree being considered sacred) before her assembled kinsfolk. Then her father's sister ties a string or thread round her neck, and this concludes the simple but interesting ceremony.

There are also among many primitive communities ritual sacrifices, actual or symbolic, at puberty. Sometimes the girl's mother sacrifices a finger joint; or stones and fetishes in the form of serpents are offered up.

Fawcett gave a description of these digital amputations as practised by the Dravidian sect of the Berulu Kodo-Vokaligaru in Bangalore, Mysore. The ceremony is termed the *Bandi-Dévurú*, and takes place at the same time as the ear-piercing of the young girls. The first phalange of the ring finger and little finger on the right hand are amputated in the mothers of the girls (Fig. 442). The festival is important and begins with feasting and the preparation of little shrines. A goldsmith, armed with a chisel, acts as surgeon and the amputated portions are thrust into a snake hole as an offering to *Dháná-Dévurú*.

Some of the animals peculiarly associated with sexual processes and the incarnating ancestral spirit in primitive beliefs are the snake and toad and the mouse.

Merensky states that among the Basuto all the procedures through which both girls and boys pass to full adult membership of the tribe are known as *koma*. Strict secrecy is enjoined concerning these rites and "betrayal of the *koma*" is the greatest insult and imprecation. The mysteries take place in wooded ravines and glades of the forests. Howling, shrieking and singing proclaims the *koma* by day and



FIG. 442.—Woman from Bangalore, who, at the ceremony of piercing the ears of her eldest daughter, has had the ends of two of her fingers amputated. (After Fawcett.)



night. . . . Clay images are displayed and adored—a remnant of the former idolatry associated with these rites. In the Northern Transvaal the girls dance round a snake of clay. They are taught by older women, they rise in the chill before dawn and kindle fires in the coldest weather, they bathe in chill water and carry a little clay model of a baby slung in shawls on their backs. They are taught household efficiency and codes of behaviour. They are told “A woman must never tell lies.”

In East Africa the term *koma* is applied primarily to the ancestral spirits and then to the unborn; finally to various fetishes or vehicles of *mana*.

Velten and Zache give accounts of a mysterious stone “of anointing,” a smooth fragment of coralline rock which is used to rub spices into the skin, and plays a rôle in the marriage ceremony. It may never be uncovered outside the house, nor seen by men. Zache says it is termed “*Jiwe la msio*”—“the stone of the secret.” The head matron strews powdered sandalwood on the stone and the girl’s body is rubbed and perfumed all over by her adult friends. The flakes of outer epidermis fall off during this friction. After this symbolic “shedding of the serpent’s skin” the mysteries become more intimate and the last traces of childhood are eradicated; the girl enters womanhood fully prepared as “one who knows.” Evil spirits are feared and exorcised, good spirits summoned, and the flat stones which are brought into contact with the body are specially powerful vehicles of *mana*.

H. R. Rust has given a graphic account of the initiation ceremony known as the “roasting of girls” among the Mission Indians of Southern California. The girls are wrapped in blankets and placed in a pit about 3 ft. deep by 5 ft. in diameter containing a fire which steams them. Here they remain four days. The older women surround the pit, singing, dancing and performing mystical gestures of propitiation to the good spirits and exorcism to the evil. The atmosphere of this festival is friendly and happy. Finally the girls are led before a yoke-shaped stone (13 by 15 in. in size and 35 lbs. in weight)—which is believed to symbolise, or have reference to, the female organs of generation. Rust and Kroeber have described similar stones in American Museums, and Rust believes they also are genital symbols. Kroeber has also described the puberty rites among the Luiseño Indians of Shoshonean stock in San Diego country, California. Here, too, a pit is dug and fire kindled, and the girls placed in the pit. They are laid on their backs in rows, relatives being side by side. Two large flat stones are then warmed and laid on their abdomens. After this ceremony they abstain from certain foods and wear a special head-dress. They remain apart from the tribe for a while and draw certain red mystic figures on stones, and these form patterns several feet in diameter. When these drawings are completed they break their partial fast. At one time they had to swallow little balls of tobacco followed by hot water. If they vomited they were considered “unlucky,” if not they were approved.

Similar dancing customs are recorded among the Modoc Indians in Oregon. They were said to “dance” for five days and nights and fast for a fortnight (Gatschet).

Petitot has published a report by a Canadian Indian on the customs of the tribe regarding girls at puberty. The gist is that the girl is regarded as ill, and secluded in a hut, where she lies still; garments are made for her and embroidered belts, her hair is oiled and her face rouged. She drinks meat soup through the hollow wing bone of a swan, and eats little. She wears a great head-dress and two wooden crosses on her breasts. She abstains from meat food. This *régime* lasts for a month from the first onset of the menses (pp. 246–249).

The exact meaning and origin of the term “*koma*” is lost to-day among the



tribes who practise these mysteries. The missionary Schloemann, who worked in Malakong among the Bavenda of Northern Transvaal, informed M. Bartels that a miniature human image of clay was put before each neophyte and solemnly announced as the "*koma*," but they no longer knew what this signified. Merensky heard the same word among the Wakonde on the shores of Lake Nyasa; they used it to designate some supreme and divine being.

On one of his journeys Schloemann passed by a tract of bush in which the women were celebrating their *koma* rites. Certain images were set up, and the driver of Schloemann's cart, a baptised native boy, saw those which stood nearest the edge of the wood. The celebrants realised this and forthwith there arose a violent



FIG. 443.—Clay figures used for instructing candidates for initiation. Madibira, Tanganyika Territory. (Photo, J. Häfliger.)

tumult; they rushed after the cart, pursuing it with shrieks and abuse up to the doors of the Mission Station. Then they assembled to the number of several hundreds around the Station and attempted to set the buildings on fire, shrieking the while: "He has seen it, he has seen the *koma* of the Basket"—which means that the *koma* should be secret and concealed as though under a basket. Finally the missionaries summoned the local headman, and the women were dispersed.

Fig. 443 shows some of these sacred clay images. They were set up and venerated at Madibira (Southern Tanganyika), and apparently served for object lessons for purposes of demonstration. The missionary Häfliger wrote to Dr. Barbara Renz (the editress of Ploss-Renz, "*Das Kind*"), stating that older women teach girls at puberty the duties of marriage, and make figures of clay to illustrate their lesson. These figures include large images of father and mother and others partly human and partly animal, both male and female, together with the sun and moon and various implements, baskets and cauldrons. The foodstuffs used in her daily work are pressed into the soft clay of the mother's image.



There can be no doubt that the "Secret of the *Bosha*," as revealed for a few moments to these neophytes—on payment of a goat or the price of a goat for each girl—among the Bavenda of Ha Tchewasse (Transvaal), is another form of *koma*.<sup>\*</sup> Wangemann gives further particulars about the Bavenda. They use a peculiar flute or pipe of great length with a wide range of notes for their *koma* rites. This instrument is kept secret from young persons and is doubtless the source of various spirit voices.

According to Endemann the Basuto girls have a special ceremony called *Pollo*. Conducted by an older woman, they go into the water far enough to be able to immerse themselves completely, and have to find and pick up a bracelet from the bed of the stream. In the daytime they are taught their future duties, and dance and sing. At night they are secluded and smeared with ashes. It is reported that they seem "crazy," "beside themselves," on these occasions; they commit all sorts of mischief and "dress themselves up." They must perform many ritual ablutions.

We have already mentioned the Cambodian custom, picturesquely termed "stepping into the shadow." Aymonier tells us that it is associated with adoration of the deity of darkness, the star devourer *Rahn* or *Ranh* (the Indian *Rahu*). There is much perfuming and burning of incense, which lasts from three to five days among the poorest classes to sometimes over a period of years among the wealthy. The pregnant woman, as well as the pubescent girl "steps into the shadows," and the Bonzes profit largely from the offerings of the faithful.

Boas describes the Nootka custom of a ceremonial feast on the platform of the house with hired singers and dancers who give performances termed *t'a'ma*. While these are in progress the girl stands between two men, both in the masks and costumes of the Thunder bird, *i.e.*, a mask which covers the whole head and face and a complete garment decked with feathers and two wing-like panels. Eight men among the dancers, who are not masked or disguised in any way, seize a great basin, run to the river-side, fill it with water and return to the house with their burden. When doing this they must move in a circle with their left hands innermost. They pour the water over the girl's feet and return to the river, continuing the circular movement with their left hands on the inside. Then a wooden screen painted with the figure of the Thunder-bird (*cf.* Fig. 432) is put round the girl and mats hung over it, and she remains for some days within this narrow space, hidden from all men and constantly attended and cared for by girls and women. Sproat's information was that she was forbidden to behold sunlight or firelight, but Boas heard that this prohibition is not so stringent and may rather be described as a precaution. While the screen shrouds her the festival outside runs its course, and songs about marriage are sung.

Boas gives the words of one of them. They sing, "I had a bad dream last night. I dreamt my husband took a second wife. Then I packed my little basket and I said before I left: There are plenty of men. Thus I dreamt."

Falkenstein<sup>2</sup> says that the negroes of Loango lead the girl in procession through their villages with song and dance, accompanied by her playmates, and even lead her before Europeans. The whole ceremony is one of pride and joy, with no shame and no furtiveness. Others confirm this account and add that songs are sung in praise of maidenhood and wedlock.

There are, however, distinct traces of hostility and fear among, for instance, the Maori. The chieftains and leaders of the people avoid approaching the women's huts or sleeping places, for any contact with "*paheke*" (the menses) would destroy

<sup>\*</sup> Communication from the missionary C. Beuster to Max Bartels.



their seership and the ancestral spirits would cease to warn and guide them. Should this misfortune happen, states Goldie, the spirits must be propitiated.

Clothing everywhere plays a prominent part, and the neophytes must often spend their seclusion in a state of complete nudity, for they are then in the presence of the spirits. To go "into the beyond" it is necessary to be stripped of earthly things, and this is strikingly shown in the ancient Babylonian or Chaldæan myth of the descent of Ishtar into hell.\* Büttiköfer has published a valuable account of the rites practised in Liberia, and he makes very clear the significance of initiation and preparation for marriage.

According to him, the *Magic Country* (or greegree bush) is a sort of novitiate through which both sexes must pass at puberty, but in strict separation :

Almost every village of any size has its greegree places at a considerable distance from each other. He has traced *greegree bush institutions* among the Vey, Kosso, Godah, Pessy, Queah and Western Bassa, but has no idea of their existence in Eastern Africa. Among the Vey, the girls' greegree bush is called "sandy," and their teachers and initiators are called greegree women or devil women. They are women advanced in years and the leader is generally the head wife of the chieftain. They are distinguished by small tattoo marks at the back of the calf or lower leg. The girls enter the "sandy" at ten years of age or sometimes sooner and occasionally remain till after puberty. Payment in kind and foodstuffs is levied on their parents by the greegree women. The girls go about naked in their "sandy," and on entry they are tattooed and undergo clitoridectomy. The tip of the organ is removed with a special knife (Fig. 444), mummified and hung round the girl's neck in a little bag.

Scarification is performed on both boys and girls, leaving little hard lumps like rows of beads on the back and loins. Among the Vey women the scar marks are single vertical bars on the loins.

Men and all initiated girls may not enter the "sandy." Sandy and "*belly*,"—its analogue for boys—are under the protection of the *N'janas*, or ghosts of the dead. Older women who visit the sandy must strip and leave their garments on the edge of the wood. The neophytes may also visit their homes occasionally, but before doing so are smeared with white clay (Fig. 445), so that they look like circus clowns. Neither they nor the boys may wear woven cotton, but are clothed in skirts or aprons of wood fibre, leaves or palms. They learn to dance, play and sing, and it is said that some of the songs are of a nature quite contrary to their usual modesty and decorum in conversation and behaviour. They learn how to catch fish, do all household tasks, weave nets and cook. Among the Liberians they are known as *greegree bush girls*, among the Vey as *Sandy-ding* and colloquially as *bony*, which is equivalent to virgin.

There is also an annual festival of *Exeat*, at which the girls are anointed with oil and hung with a profusion of ornaments, on arms, necks and ankles, to make a harmonious clicking as they move. The *Soh* and *Soh-bah* wear great wooden masks or *devilheads*. These masks are cut with great skill from single blocks of wood and are large enough to contain the whole head and neck ; they are made to measure so that the wearers can easily look out of the slit eyeholes. The *Soh-bah* masks are male faces, the *Soh* female, with naturalistic treatment of the hair. (*Soh* means "devil" or wood spirit ; *Soh-bah* "great devil." Masks are depicted in Fig. 446).

The masks are blackened, but sometimes have fantastic streaks and patterns in bright

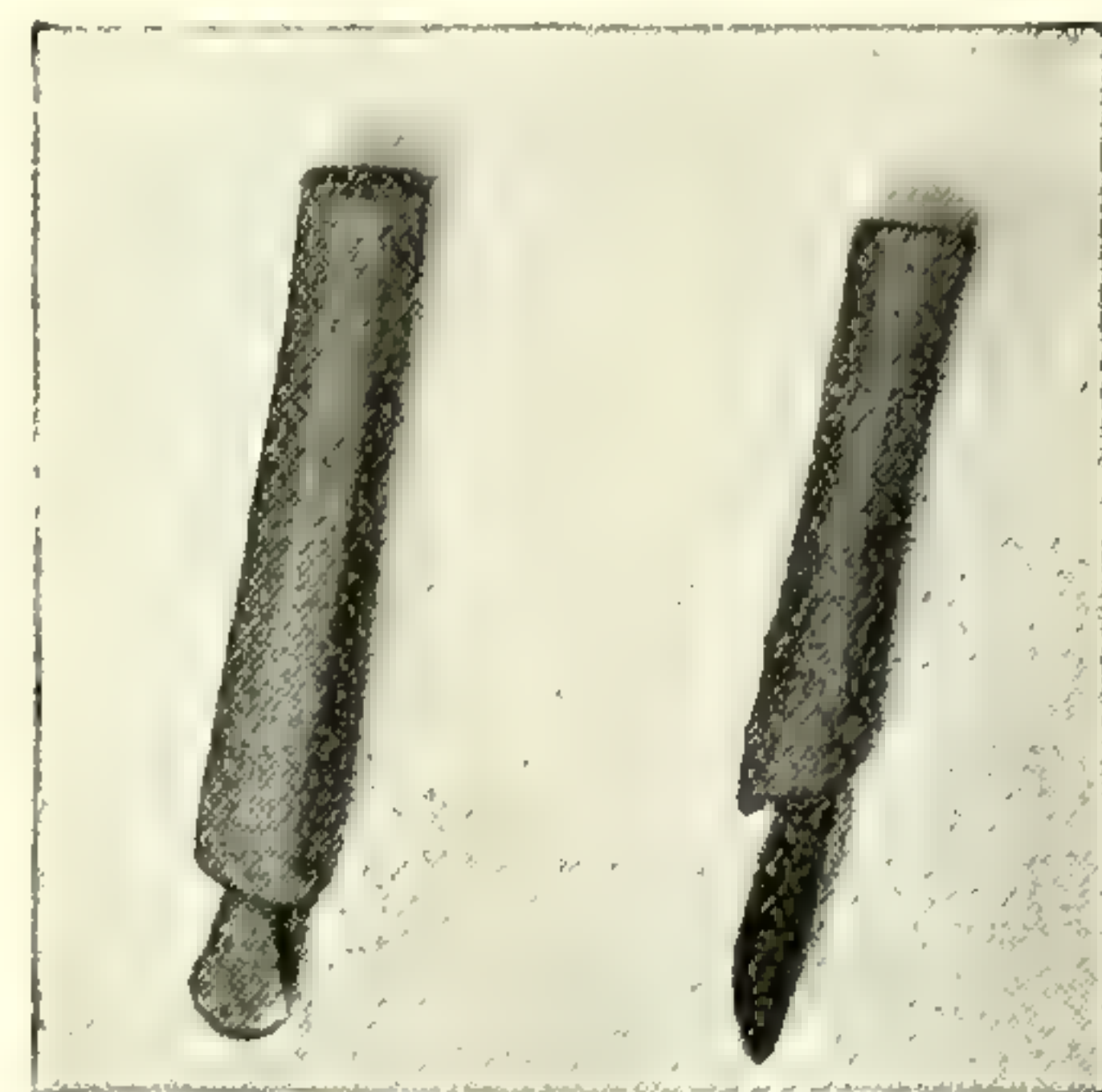


FIG. 444.—Instruments used for circumcising boys (left) and girls (right). Wageia. Mus. f. Völkerk., Leipzig. (After Ploss-Renz.)

\* The goddess of love and nature and queen of heaven, Ishtar, went into the shades of Urugal, the Chaldæan inferno, to meet her lover. At every gate the servants of the goddess Irkollat stripped one of her ornaments or garments. At the last gate they removed her girdle. Mediæval witchlore insisted that invocations be made naked or at least with bare feet and head.



colours (chiefly red or white). Their lower rims are curved and the leafy cloaks or garments above mentioned are attached there. But there is no trace in these ritual vestments of the feather adornments so popular in Lower Guinea.

The chieftains insist on a certain period of seclusion in the greegree bush, especially for the boys, to consolidate their authority and power.

Among the Wabondei in East Africa, Baumann found active puberal rites. These were known as *Galo* for boys, *Kiuanga* for girls. Here, too, tribal marks



FIG. 445.—Greegree bush girls smeared with clay, Queah River, Liberia. (After Büttiköfer.)

were scarified on the body and the girl went into the woods naked with an older woman and stayed there for a week. There was a final dance, in which all the youth of the neighbourhood took part. The girls sat naked in the village on their mothers' knees and were painted with white paint on face and body. Finally, there was an ordeal, which consisted in running the length of the village with red hot coals in their hands. Dances and drinks of palm wine closed the celebrations.

Kropf's account of the Ama-Xosa is very similar. He lived among them as a mission worker for many years, and knew them well. He described the initiation feast of girls, or *intonjane*. He was much shocked by the nude dances in which youths and girls alternately leapt and whirled and writhed for hours on end, in



each other's presence. These dances were called *umtshotso* and appear to have concluded with promiscuous coitus in which even young maidens were violently



FIG. 446.—*Bundu* devil masks. (After Buschan.)

compelled to join if they recklessly joined the throng. Fights among the men were frequent and many a father was reduced to poverty by the expenses of the



FIG. 447.—“Kaffir” wedding group. (After Buschan.)

feast, which sometimes lasted a month! They terminated in a cattle show and cattle races, the various kraals competing and joining in a grand final display.



Fig. 447 shows a South African native wedding feast. The costume of the girls is reminiscent of one of the most archaic of human superstitions, the exposure of the genital and gluteal regions as a charm to fend off evil spirits. Luther's letters relate an occasion when he himself dispelled a vision of the Evil One by these methods.

In Nauru in Micronesia the puberty of a chieftain's daughter is the signal for a public feast with dances on the shore and mutual exposure, like the "Eland bull" dances of Africa (Krämer).

The contrary of *exposure* is "dressing up," *investiture* or disguise. This



FIG. 448.—Tattooed nubile girl from Koita, New Guinea. (After Brown.)

survives with startling vividness in the attenuated modern European remnant of nature feasts and puberal rites, the Carnival. It is significant that the ritual investiture is so often a leafy one, for it may be connected with vegetation cults. Sometimes, investiture is whittled down to wearing a few ornaments.

Among primitive peoples a most frequent method of proclaiming nubility is by tattoo marks (Fig. 448). Sometimes a perineal girdle may be worn, as among the Bakairi and Trumai of Brazil, or a whole distinctive costume, as among the Krobo of the Gold Coast (see Figs. 439 and 440).

In Abyssinia the maiden wears an ornament on her forehead supporting an ivory disc; whilst Agni girls are adorned with all the ornaments the family can find.



In China and Japan the hairpins are the distinctive adult ornament. In Japan the girl's hair is dressed and adorned, and she is introduced with great ceremony to her adult relations and their friends.

In British Columbia the Clayoquot Indians dress their girls in a curious costume



FIG. 449.—Wooden doll with cedar bast dress, representing festival clothes of a girl at the menarche. Clayoquot Indians, British Columbia. Front view. Mus. f. Völkerk., Berlin. (Photo, M. Bartels.)

of cedar wood bast which shrouds them from head to foot. In the Ethnological Museum at Berlin there is a doll which wears a complete model of this costume. It is shown in Figs. 449 and 450.

Among the Nootka and neighbouring Hesquiat tribes the elaborate costume has become a head-dress: it is worn for four consecutive days on the first eight



menstrual occasions. This head-dress is made of cedar bast with beads and the beaks of parrot fish, and is depicted in Fig. 451.

G. Fritsch sends an account of the "Boyale" among the Bechuanas. This seems equivalent, for girls, to the male circumcision or "Boguera." The girls are



FIG. 450.—Back view of Fig. 449.

taught their future duties by an older woman in strict seclusion ; they go into the desert in sixes and sevens, trotting in single file to the sound of curious monotonous chanting. They smear themselves with white clay and wear a girdle of canes and chains of dried pumpkin seeds. The canes are gathered into aprons round the loins and rolled into sausage-like tubes round the thorax. The pumpkin seeds, which



hang between the canes, give a sharp dry rustling which proclaims the girls' approach and is very loud when a troop comes running along. If they are disturbed, in spite of this warning sound, they may use the thick and long staves they also carry to beat any man most severely. The initiation also includes tests of skill and ordeals of endurance.

Fritsch has added a further note on the *boyale* showing a misinterpretation of its nature in a recent European daily paper, which contained an illustration of girls in the typical costume, with the caption that they were "courting" (Fig. 452). The expression is quite misleading as will be clear from the preceding account. The great girdles are like safety life belts, and when the initiation is completed these are collected after nightfall, in the presence of the assembled neophytes, piled in a heap and burnt in the *khotla* or village square. As they flare up, the girls dance fantastically and chant, while the men, sitting in a ring, make music. So nothing could be less like "courtship" than the special customs of the *boyale*, which imply strict segregation and abstention for both men and maids.

We learn from Roth that the native girls of Queensland are brought back to their male companions by their mothers on the fifth evening after their first monthly period. The mother decorates her daughter with certain insignia, a girdle round her body, a necklace of oyster shells and a frontlet or garland round her hair. Sometimes she also wears a sort of breastplate of beads. Moreover, she also wears crossed bands from the shoulder to the opposite armpit and fastened at the waist behind and bracelets on wrists, and elbows, decorated with the feathers of the green-bill parrot.

The distinctive dress of the Yap island girl is simpler. She wears a black string or band round her neck and a very full skirt of grass or woven fibre over her former exiguous skirt of grass plait.

Among the Nama Hottentots girls go about quite naked till puberty. According to Hahn they are clothed in a richly decorated *kaross* (mantle of wild beasts' skin with the fur), to show they are nubile, and they hold a sort of reception, sitting cross-legged for three days in a sort of stockade of wood posts, a foot high, opposite the entrance to their fathers' huts and receiving visits from kinsfolk and neighbours, who are also entertained to a feast.

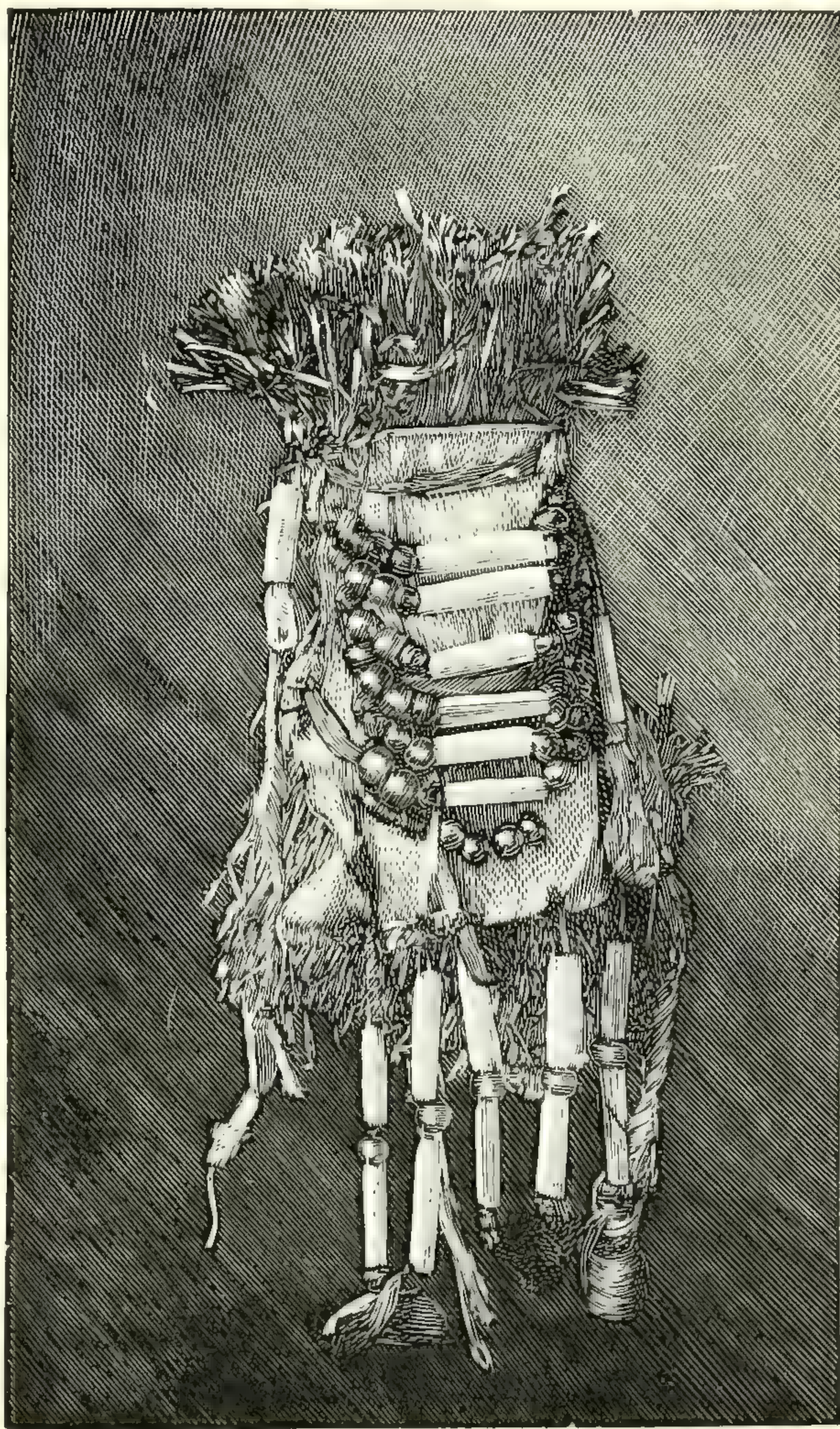


FIG. 451.—Head decoration worn by a nubile Hesi-quiut girl. It is made of cedar bast and hung with cloth, glass beads, fish bones, etc. Mus. f. Völkerk, Berlin. (Photo, M. Bartels.)



The Ceram natives feed their girls on raw food, eschewing all cooked viands, and, indeed, mainly limiting their diet to sago and dried fish. Their condition is known as *pēmali*, and may last for a ceremonial week or five months, according to their parents' means and status in the community. They wear petticoats of pandanus leaves known as *kain-kadu* (Schmidt <sup>9</sup>).

The Barolong Bechuana, according to Joest, content themselves with shaving the girls' heads, leaving only a small tuft of hair, and they clothe them in *small aprons* instead of the bead chain of childhood. This proclaims their nubility.

Menstrual blood is regarded as a peculiarly potent source of evil and harm by primitive peoples, and this archaic fear has survived in many European communities,

especially peasant populations, to this day, under all sorts of Christian and moralistic rationalisations.

Primitive peoples believe that demons arise from the menstrual blood and that these evil elements may seek to re-enter the body of the girl—or of other women—and render them diseased or sterile. Among the Dyaks of Borneo, according to Hein, pregnant women are specially afraid of such contingencies. They fear the *kamiak*, an evil entity with the power of flight, who persistently tries to intrude upon and destroy their unborn child.

Similar descriptions of the custom of burning or otherwise destroying or burying all garments worn and utensils used during menstruation are given by the missionary Keysser of the Kai in New Guinea, by Erdland of the Marshall Islanders, and by Fritsch of the Bechuana. Erdland mentions the hieratic postures in which the girls are compelled to remain



FIG. 452.—Bechuana "bojale." (Photo, G. Fritsch.)

during the period, and the custom of fumigation and lustration with perfumes and flowers. Fritsch records the painting of the body red after the girls have bathed in the river and greased themselves all over. After this ceremony the Bechuana girls are marriageable, and very soon become wives and mothers.

The Tlinkit of Alaska also burn all the girl's clothing, deck her in fresh garments, give a feast and pierce her lower lip for the ring, as has already been described.

Fritsch found that the Ama-Xosa buried the garments and utensils; the girls go to lonely places at night with their female companions and there dispose of the traces. Next day they are solemnly received into the company of the adult women.

Any remnants of food consumed by the girls at such times are also tabu and accordingly destroyed, as Keysser reported among the Kai.



The crowning and adorning with flowers and rubbing with fragrant palm oil are favourite items of puberal and menstrual treatment. On the Marshall Islands, according to Erdland, the inunction of the chieftain's daughter is performed by a wise woman, beginning with the finger tips of her right hand up to the shoulder and extending over the whole body, while spells and magic formulæ are repeated. "May lack of being loved depart from thee, O daughter, thy loveliness shall shine

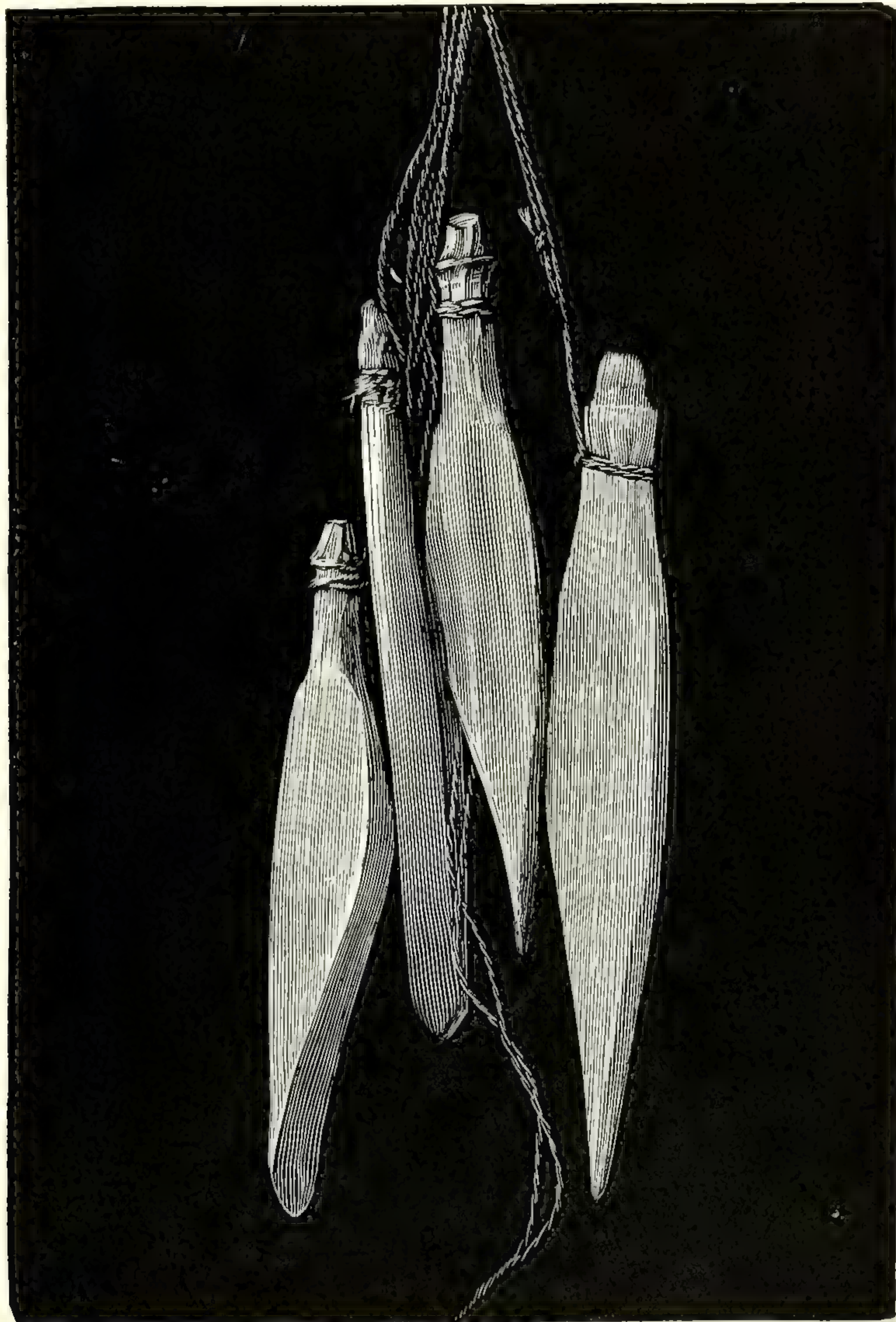


FIG. 453.—Head scratchers of bone and wood used by the Hesquiat girls of Vancouver during initiation ceremonies, since touching the head with the hands is forbidden. Mus. f. Völkerk., Berlin. (Photo, M. Bartels.)

forth, may men come from north and south to thy hut, laughing and leaping to greet thee, thy loveliness is peerless."

Fire and fumigation are also potent spells in puberty ritual as in funeral ceremonies.

There is, for instance, the puberty ordeal by fire. Among the Swahili, according to Zache, the girl has to dance up to the fire and lift a vessel full of water, set in the midst of the flames, without spilling any of its contents. Or she must catch and lift



in her mouth a small silver or bead chain hung round her neck while lying on her back, a feat which implies considerable spinal elasticity and agility.

Fumigation as a form of menstrual treatment is derived from the use of fire and smoke as weapons of exorcism against demons. It is employed by the semi-civilised Ticuna Indians on the Amazon River ; by the Kalina and Mauhe—in combination with fasting—and by the Macusi of British Guiana, who sling the girls in hammocks under the vent hole of their huts. These tribes also destroy all vessels used by the girl for eating or other necessary purposes.

According to Grinnell, among the Cheyenne the girls were kept close to the fire, bathed, painted red all over and fumigated by means of a live coal from the fire, on which fragrant grasses, cedar chips and a special white salve were thrown. The girl bent over this smouldering scented heap and caught the fumes in her clothes. Then, with her grandmother, she left the hut and went to another, where she remained four days. Her father, standing at the door of the hut, announced his daughter's arrival at womanhood to the tribe, and after the four days were over, the girl returned to her home, and was again fumigated with grass, juniper and salve, standing across the fire with her legs apart.

Among the tribes of the North-West Coast the girl must, states Jacobsen, always lie with her head to the South. The Songish girl must return to her home, walking in the path of the sun and turning her back to it (Boas). The Sitka and Aleuts make the girls wear broad-brimmed head-dresses to exclude the sunlight.

The hair is also an object of special attention and precautions, being sometimes shorn or singed off. The neophyte is forbidden to touch her hair (*cf.* Biblical legends and customs, the story of Samson, the sacrifice of the long tresses of brides in Ancient Greece and among the Hebrews, witches' ordeals (*Mall. Malef.*, III., 15), in which all the hairs on the body were singed off, etc.). Joest mentions the shorn hair of the Barolong girls and Schomburgk the singeing of the head hair among the Warrau and Carib Indians of British Guiana.

Among the Hesquiat of British Columbia menstruating girls may not touch their heads or hair with their fingers. In order to scratch their heads, which are often verminous, they use little narrow wedge-shaped implements of bone or wood about half the length again of the third or index fingers. The Berlin Ethnographical Museum has some such specimens which are depicted in Fig. 453.

The same prohibition and the same implements are customary according to Boas among the Nootka and Shuswap. The girls carry the combs and bone scratchers for their bodies hanging at their belts.

We have mentioned the partial inhumation of Australian native girls on the Pennefather River as recorded by Roth.<sup>5</sup> They, too, must only scratch themselves with a little stick of wood and may only speak to their mothers, who bring them food. When they return to the camping place of the tribe they hoist themselves up by the staves or poles on either side of their "grave." When they have returned to their camping place they may, however, converse with their husbands, for active sexual life began long before puberty among these people. In the daytime they return to their inhumation, and when the period of five days is over the grave is filled with ashes and stamped down.

In Eckarth's collection of medical and pseudo-medical folklore to which we have often referred, it is recorded that "some believe that the hair of a menstruating woman, if pulled out and buried in a refuse heap, will turn to serpents." The glance of a menstruating woman prevented any wound from healing, their bite was fatal, as that of mad dogs, especially in Cyprus and Crete. They could cast the evil



eye or "overlook" both poor children and grown people "which is even worse," according to Eckarth.

### (b) Blood-letting, Fasting and Scourging

We have already dealt with the special technique of establishing contact with supernatural powers, or the art of producing certain mental states, through hunger, solitude, loss of blood and the use of narcotics. Thus circumcision may have been originally a propitiatory sacrificial rite and blood offering, and all the hygienic or even æsthetic purposes attributed to this archaic custom by later writers or codifiers are simple rationalisations.

The puberal rites of girls in those particulars are less prolonged and painful in most respects than those of boys. We shall only cite a few conspicuous examples regarding them.

Thus in Tahiti they are tattooed, and according to Forster await this ceremony with eager longing.

According to Mauch, the Makalaka (South-West Africa) tattoo the pubescent girls with 4000 little cuts and then rub in acrid black ointment, occasioning great pain. The elder women of the tribe are the operators.

The Paraguayan Lengua and Payagua tattoo the face, states Demersay, and Dobritzhofer reports the same of the Abipones according to F. de Azara. The Kadir tribe of Travancore also tattoo girls at puberty.

In Burma the first menstruation is the accepted time for proceedings such as lip-piercing, ear-boring and the piercing of the *septum* for a nose ring. The rings finally worn are of enormous size.

The Tlingit of Bering Straits pierce the girl's lower lip for the insertion of a wooden plug.

Langsdorff saw one woman whose labial perforations had grown so wide in the course of years—for they are continually stretched and dilated—that she could wear a disc-like ornament 5 in. long by 3 in. wide (*cf.* Aurel Krause).

The Caribs of Guiana have an acute ordeal at puberty for girls as well as for boys. Schomburgk describes two deep incisions the length of the back from shoulders to loins made by an aguti tooth, into which pepper is rubbed. They may not cry out or moan, but lie bound in a hammock and fast for three days. They receive amulets of teeth, which they wear round their necks. After three days they are taken to a fresh hammock and fed on roots, water and cassava bread for a month. This procedure is repeated at the second menstruation, but on the third occurrence the girl is regarded as initiated and adult.

Ritual fasting at puberty was, states Parker, strictly observed by the Chippewa. The girls were encouraged to fast for five whole days, during their seclusion; many did so, drinking only cold water and eating no solid food. The dreams they experience under this *régime* are considered highly important and they are urged to remember them and learn from them throughout life. This is a significant example of the magic of suggestion. Among the Nootka girls special foods are forbidden. For eight months, after their first menstruation, they must abstain from fresh fish, especially salmon.

In South America the ritual fasts among certain tribes take place between the first and the second menstruation.

Koch-Grünberg mentions that the girl's hair is cut short among the tribes of Rio Ariary (North-Western Brazil), and her back rubbed over with *genipapo*



*paint* by her mother. (Her hair is probably subsequently used as a head-dress and decoration by young men as on Uaupés.) There is a great feast, with dances and drinking. The girl must fast from all animal food and large fish, and may only eat *beijú* (manioc) and pepper with small fish till her second menses have concluded. Then she has a great cauldron of animal food and is painted all over with *karayurù*. A general feast follows.

Powers tells of the fasting ritual of the Californian Wintun Indians. There is a dance to which all the people of the neighbouring villages are summoned. For three days before this ceremony the girl eats no animal food, only a sort of soup of acorns; she is, of course, secluded, and contact with and even approach of any male person means his death. After these three days she consumes a ritual food, a soup of berries of the Californian buckeye, whose poison has been removed by previous soaking or steeping. Then she is a woman and able to undertake her natural duties.

Wafer says that the native girls on the Isthmus of Panama are forbidden, like the Nootka, to come within sight of men at these times. Shuswap maidens have to drink out of a painted bowl of birch bark and must always empty it entirely at a draught. The Songish may, according to Boas, only eat the tails and rear parts of fish, not their heads.

Schlagintweit gives a curious account of a Vedda custom. The women, during their seclusion, cook rice and eat it together; the men, meanwhile, eat only roots, for the evil spirits will otherwise devour them. On the ninth day there is a feast, palm brandy is poured on the earthen floor of the hut and friends are treated to this spirit and to rice dishes. Meanwhile, the woman remains apart; on the tenth day the man leaves his hut and only returns after all the rice has been consumed by the women. During the ensuing four days the man must refrain from eating rice at home, as well as from coitus with his wife.

#### 4. THE CONCEPT OF RE-BIRTH AT PUBERTY

This concept seems to be the very core of the male puberty ritual, and it would appear as if the idea passed from the boys' initiatory ceremonies to those of the girls. The hut in which the girl is secluded at her first menses has as equivalent for her brother the house of the dead, or, in the extreme form of the myth, the belly of some monster or the shades of some underworld. Out of this fearsome captivity, the neophyte is "born again," "is risen," "puts on the new Adam." Christianity could only modify, not extirpate, primitive beliefs, and a part of it may be described as the misunderstood and expanded *motif* of the puberty ritual to which a metaphysic and ethics have become attached. The Jonah myth and the Resurrection and Ascension of Jesus of Nazareth remind us forcibly of these archaic concepts.

We may perhaps interpret the female puberty ritual in the sense that the girls die as sterile children and are then reborn and become fertile and true women. (*Cf.* the myth of Persephone and her mother Demeter.)

The sacrifices, human or animal, offered at puberty festivals, constitute a kind of embassy; the despatch of messengers to the powers beyond the grave, or beyond sight, and the same concept appears in funeral and marriage rites. Contact with the beyond is established by sitting or kneeling on the slain creatures' skins, by wearing the animal's hide, or by scourging with thongs of hide, etc. Koch-Grünberg reports that on the Rio Ariary the Brazilian Indian father of the girl at puberty sings a long chant or hymn before sunrise with a list of animal appellations, just as on funereal occasions. This happens at the girl's second period.



Among the Nama Hahn <sup>2</sup> states that a near male relation—generally a cousin—takes the hide of a cow that has been slain and hangs it over the girl's shoulders and head. At the same time, he wishes her the fertility of a fair young heifer. Then friends and kinsfolk come with similar good wishes and a feast follows.

The concept of rebirth is shown most clearly in the practice of painting the body, and it is logical to suppose that this is done in order to simulate a skeleton and corpse. (Cf. Fig. 454.) Thus they often use white paint for their puberty rites and sometimes soot (*e.g.*, the Nootka and Tlinkit), yellow paint or a collection of multi-coloured streaks and spots. Keysser speaks of the New Guinea girls, loaded with trinkets, their faces totally whitened and then transformed into startling masks by



FIG. 454.—Circumcised Bakulia girls, painted white, and with ornaments, pots and brooms.  
(After Weiss.)

liberal streaks of red paint, their bodies oiled and rubbed with salves and their waists encircled by a special kind of apron.

Among certain peoples, there is a solemn ceremonial dedication at puberty, with good wishes and a certain kind of consecration, which belongs to a more evolved grade of ideas, though its forms are often strange in our eyes.

Reichard describes the girl's puberal initiation among the Wanyamwesi of Africa as an exclusively female festival with song and dance and libations of native beer. The girl has already, in almost every case, lost her virginity; she is bathed and washed all over with herbal concoctions by the medicine women or *waganga*; then she is anointed with oil and sprinkled all over with meal. Further, there is a sort of examination or test of efficiency in an important direction. The girl has to perform the movements of coitus in various postures before a jury of matrons. Men are most strictly excluded.

The use of red and black paint in puberal rites is reported by Petitot of Canadian Indians, by Wissmann of Lubuku negroes, by Döhne of the Zulus, and by Wolff of the Congo districts.



Antonie Herf has given an account of a festive procession in Java, where about a dozen young native men, naked and powdered with a yellow substance which gave them the appearance of wearing saffron-coloured tights, carried a costly jewelled mirror, a red fan, a brush and comb in an ivory case lined with red velvet, plates of gold with transparent sachets of native cosmetics and a variety of other such luxuries and toilet requisites, some unknown to her. They were followed by musicians and then by floating white banners and snowy flowers and tables loaded with fruit and confectionery. A fantastically decorated open carriage, drawn by white horses, followed with a much bedizened little brown-faced girl of about 10 years of age, who looked very unhappy. A crowd in their gayest garments and another band brought up the rear. It was all in honour of a maiden, whose maturity and nubility were thus proclaimed.

Sometimes the feathers and especially the soft underdown of birds are used



FIG. 455.—Amazon girls. (After Kronau.)

for the symbolic disguise of the puberty ritual. Thus we have already noticed the varied paint and feather belts of the neophytes among the Queensland aborigines, according to Roth<sup>5</sup>; Schomburgk also mentions ornaments of down and beads on the shorn hair of the girls among the Warrau of British Guiana; where the down is also stuck to the girl's arms and thighs with a glutinous paste.

The *teeth* receive particular attention in these rites. Sometimes two or three or more teeth are knocked out; sometimes they are filed to points, and sometimes blackened or otherwise discoloured. The discoloration is a milder form of the more archaic removal, a sort of substitute sacrifice. Wundt regarded the original custom as a form of magic connected with breath—and the soul as carried in the breath. He may have been right, and we interpret the trend of thought here as follows. The "dead soul" of the old body must be given room to escape, a belief shown in the custom of opening the windows for the dying among more primitive Europeans.

Among many tribes in Australia two teeth are knocked out at puberty in both girls and boys. In some districts this is known as *tchirrintschirri*, and is performed by means of wooden wedges and a stone (Fig. 456). The wound is dabbed with wet



clay. The children hardly move a muscle as they undergo this painfully primitive dentistry.

In the Malay Archipelago teeth are filed in both sexes at puberty by about a quarter of their original length and coloured black. In some cases they are adorned with tiny spangles of gold (*cf.* Fig. 210). Ida Pfeiffer has described the operation (which is performed with considerable skill) on a Princess of Celebes, and Riedel<sup>1</sup> informs us that on Timor Laut the teeth are filed during pregnancy should they not have been so treated at puberty.

The Sawu islanders, in Indonesia, also have their teeth filed at puberty.

The Yap islanders have their teeth blackened by means of a mixture of earth (*rungedu*) from the taro swamps and vegetable saps (from *Terminalia catappa*), abenun (*Sonneratia acida*), and a third, *ngmuat*, whose European equivalent is unknown, which are so powerful that they can saturate the teeth for life in 24 hours.

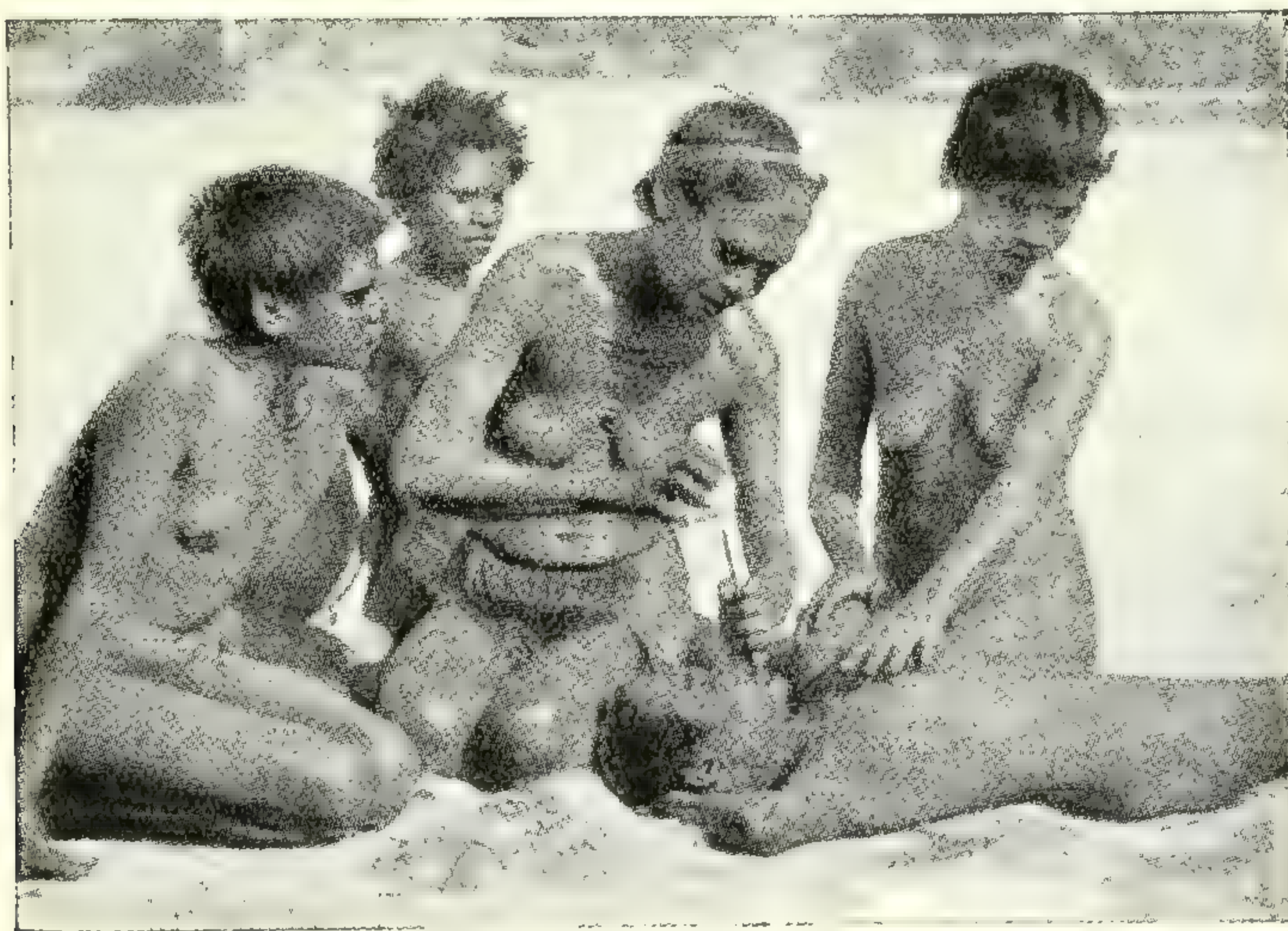


FIG. 456.—Teeth operations. Australia. (After Spencer and Gillen.)

Next day, states Senfft, kinsfolk inspect the result and bring oyster shells as gifts.

The same method and somewhat the same vegetable substance are used by the Kai, according to Keysser. In Siam and Samoa, according to Krämer and Schomburgk, the long hair is cropped. The most detailed account of dental treatment in which the substitutional and sacrificial nature of the discoloration is clearly indicated comes from Cambodia and is given by Aymonier. The ceremonial here is very elaborate and protracted.

The colour *red* and the custom of painting the face and body red at puberty or other ceremonial occasions are also associated with re-birth. Already in palæolithic times the bones of the dead were coloured red, or red substances were buried with them. In order to colour the bones it was, of course, necessary to exhume them after provisional burial or wait till the processes of nature had laid them bare, as is done by some primitives to-day. Red, being the colour of blood, has naturally close associations with life.

The use of red paint at puberty is mentioned by Fritsch among the Bechuana; by Wolff among the Kabinda; by Wissmann on Congo tribes. The hut in which the Kabinda girls are secluded is hung with red stuff or smeared with red clay within. She herself wears a red garment, and is painted red with a dye which she



has prepared by rubbing with a stone. She remains in this seclusion till she is married or obtained from her relatives (Fig. 457).

Wissmann relates that on the Congo the girls are rubbed all over with powdered *tukula* wood and castor oil on their release from seclusion. Their faces are painted red and they wear special garments and head veils. Thus attired, they are carried on men's shoulders through the village and a feast is given by their parents.

## 5. FERTILITY MAGIC

The neophytes who have passed through these rituals are expected to become "as little children"; they know neither their house nor kin, they receive new names and instruction in all the arts of life. The girls especially are instructed in the facts of sex and the customs associated therewith. In East Africa a dance or pantomime of an erotic nature is essential to their education. Velten has fully described this dance among the Swahili and Zache confirms Velten's account.

The dance is termed *unyago*. The young neophyte is *mwari*. Some of the expert matrons of the tribe dance before her, displaying the twisting movements which this people have brought to a pitch of mastery in the sexual act; then the girl must copy the adepts till she is herself expert. These movements are called *tikitiza*. Songs are sung addressed to the girl, urging her not to "hide her hips," and the *kungwi*—or wise woman—sings inviting her to "grind the corn" otherwise than with her stone quern. The girl must also go through certain physical exercises proving spinal suppleness and agility, bending backwards, etc., and pass an examination on the sexual terms and allusions of the songs. If she guesses aright she is applauded, *Chereko!* (my child knows a thing or two!) If she is shy or stupid, blows are her portion. Finally she is adorned and led back to her home in triumphal procession.

This instruction is carried out by a large number of women, and the movements are, of course, virtually those of the "danse du ventre." According to Zache, the women move in close single file, describing a circle round the crouching girl. They advance slowly with a shuffling tread, and from time to time they turn round completely. Their arms hang loosely, their eyes are half closed or gaze dreamily into the distance. Meanwhile, they execute a twisting movement of the buttocks and hips, sometimes they flex their knees at the same time, the *Manyema* women being especially apt at this. The agility of their loins and buttocks is positively amazing after years of practice at *kucheza kiuno* or making play with their hips. Zache quotes some of the verses they sing, dramatising the girl's timidity and exhorting her not to be afraid to join "those who know." Thus they repeat, "Oh! on the day my c—— is open, Mother won't be there! Little sister won't be there! Oh! on the day my c—— is open! Oh! Mother! It's the old story! It's something hard and long, that old story!" Girls already nubile who have not been formally initiated—e.g., Wanyamwesi women who have migrated to the coast—are also permitted to receive this instruction by which they are eager to profit, and these girls are termed *wari-kilili*. Without knowledge and aptitude for the *ku-tikitiza*, they would find no male partners in the coastlands, but be despised as *wachenzi* (savages) and not admired as *bibi* (real ladies).

Fertility ritual magic also includes ceremonial scourging or beating. This ancient practice probably combines two distinct ideas: that of sacrifice (scourging), and that of vegetation worship. It survives in some carnival customs, and was prominent in the Lupercalia of Old Rome.





FIG. 457.—Loango negress being sold by her relatives. (Photo, Falkenstein.)

Among the Uaupes the girls are not only half starved, but beaten with switches and creepers by their kinsfolk all over their bare shoulders. They often lose con-



FIG. 458.—A fecundity ceremony: "The Whipping of Women in ancient Rome." (After von Reitzenstein.)

sciousness under this ordeal and even deaths in consequence are not unknown. The whipping is repeated four times at intervals of six hours, and the victim may only lick the instruments of castigation, which have been dipped into the food



cauldrons during this time. If she goes through the ordeal, Bates states that she may satisfy her hunger, and is declared marriageable.

The Macusi Indians of British Guiana, according to Powers, have similar ceremonial scourgings performed by the girl's mother at the conclusion of the first and second menstrual periods. A cry of pain is strictly prohibited and considered a disgrace. After the second scourging the girl is eligible for marriage.

Among the natives of Ceram the girls perform a symbolic action after laying aside the garments worn during menstruation (*kai-kadu*). The festival then celebrated is termed *lepas-kain-kadu*. An earthenware vessel, covered over with a broad banana or pisang leaf, is brought before the girl. In the leaf is one small hole and the girl must try to find it and tear it with her eyes closed. Meanwhile, her friends make her task difficult by pulling the jar about from side to side. If she finally succeeds there is loud applause. This symbolism implies that an intact hymen is not prized in Ceram, and that the girl is free to do as she likes till marriage (see Schmidt <sup>9</sup>).

In the rituals of some races there is definite specific preparation for sexual activity and motherhood. In many cases the girls are no longer virgins at puberty. But, if they still are so, there is sometimes a formal perforation and a systematic dilatation of the vagina, either by means of some instrument or by digital manipulations, or through intercourse with some person immune from the *mana* of the hymeneal blood, which is supposed to be of evil omen, like that of the menses.

The Sawu islanders, states Riedel,<sup>7</sup> are very thorough in these methods. A big *koli* leaf is folded together and inserted into the girl's vagina in order to widen it. The breasts also are treated by massage.

In Central Africa, also, according to Angus, the girl is shown the different positions for sexual intercourse among the Azimba people. The vagina is also treated, and if not previously enlarged it is now widened by means of a horn or corn-cob, which is inserted and secured in place by bands of bark cloth. There follow dances, songs and practical demonstration of action during coitus, in an assemblage of the women of the tribe.

Erdland states that on the Marshall Islands the perforation of the hymen was performed by some older male relative, sometimes, indeed, by the girl's own father, after a festival of two or three weeks' duration.

After the *pollo* dance of the Basuto, according to Endemann, there is a festival at which the latest batch of circumcised young men eat and drink, and then have intercourse with the girls.

The same custom prevails among the Central African Madi, between Dufilé and Fatiko. Emin Pasha states that the girls remain in their huts with oval doorways and are visited by the newly initiated young men. If a girl becomes pregnant her previous betrothed must marry her with payment of the full bride-price. Burton mentions similar customs in the districts south of the Equator.

Among the Shuswap, according to Boas, the secluded girl leaves her hut nightly and plants willow shoots smeared with paint so that she may become rich. She also climbs trees and tries to break their topmost shoots in order to become strong.

In Victoria Province, according to the same authority, the girl must make a present of salmon, which are laid on the stones near Finlayson Point Battery. This promotes generosity. She must also climb Petléwan Hill, near Cloverdale, and dip her hand in a pond there. If she catches grass in her hand she will be rich, but if her fingers grasp only water, she will be a poor man's wife.



## 6. PRELIMINARY MARRIAGE CEREMONIES

We have referred to this subject already, and shall now touch on it again. The most striking differences from our own ideas and customs are exemplified among the *Krobo* girls on the Gold Coast. Their peculiar dress is shown in Fig. 440, for which we are indebted to Dr. Vortisch, who sent it to Max Bartels. Marriage often follows the completion of puberal initiation, which may, however, last for months. Vortisch describes the festal parade of girls after completed ritual initia-



FIG. 459.—Krobo girls (Odumase, Gold Coast) in the special dress worn prior to marriage. (Photo, Vortisch.)

tion through their villages in ceremonial array. They are known as “brides” (see Fig. 459), and the actual nuptials generally follow shortly.

On the Ucayali River in Peru there is deep drinking on these occasions, and Conibo girls dance with the young men or the older women to the sound of flutes till they fall senseless to earth, while music sounds from native pipes. This feast is termed *chenianabiqui*, according to Marcoy.

Powers gives a somewhat similar account of dances and improvised songs of an erotic kind among the Wintun Indians of California.

Among the Makololo and other tribes of the Upper Zambesi Basin the neophyte's girl friends and playmates are summoned and entertain her for eight days with their dances to the sound of native castanets. The chieftain's daughter is conducted into the forest and remains concealed in the company of a faithful slave woman,



but she, too, is visited at even by her fellow-maidens, who bring food, rub scent into her hair and give her all manner of good advice for the future. At the end of the week her wedding, states Holub, is then celebrated.

In Kpandu (Togoland), the girls sing a minor melody of very mournful cadence, to the following text :

*Adumla, Adumla, de gbe me yie.*

(To marry Adumla I will go.)

*Be tro me le Adumla si wo.*

(For fetish is not Adumla's hand.)

*Gbetzi me' le Adumla si wo.*

(Shame is not Adumla's hand.)

*Adumla de gbe me yie.*

(To marry Adumla I will go.)

In the South-Western United States of America we find curious resemblances in the puberty feast of the Hopi Indians of Southern California and Arizona. Powers states that the *Kin Alktha*, or dance of maidens, follows the attainment of puberty. For nine days in succession the men of the tribe meet and dance among themselves, women being excluded. Meanwhile, the girl is concealed in the hut, fasting from animal food and hiding from the eyes of men. On the tenth night two young men and two elderly women come to find her and lead her forth. They are chosen from among her kinsfolk. The youths wear large masks of dried rushes or hide pulled over their heads and bearing a grotesque resemblance to a sea-lion's muzzle. The girl is led forth with the youths on either side and the two older women flanking the latter. Before the assembled tribe the girl walks solemnly backwards and forwards ten times, raising her arms to her shoulder level and chanting. Finally, all five leap high into the air and the tribe greets the new woman with loud cries of welcome.

The *Efundúla* festival of the Ovambo of South West Africa has already attracted some attention among anthropologists. Brinckner has given some account of it. The festival is announced by drum beating in the chieftain's *Eúmbó*, which lasts for some days. Then the mothers of the pubescent girls bring them to the royal *Eúmbó* and watch over them for one night. Then the real feast begins. The youths freshly initiated, and many married men as well, come with drums and songs to the royal residence at sunset, and all night long there is wild dancing, singing and the throb of African drums. The girls' bushy hair is loose but interwoven with white beads and berries (symbolising the female organs); they wear girdles of beads and husks of fruit on their feet (fertility) and wave ox-tails (symbolising the male organ) in their hands. The dancing is continuous and the owners of the *Eúmbó* must vacate their usual quarters while it lasts. But the girls are under strict surveillance, and any physical intimacy with any of the men or boys would mean death for the girl and life-long slavery for him. Then the crowd disperses. The girls are undressed by the older women, head-dresses put on them and ashes rubbed over their bodies. Then, singing a curious recitative "*Ho hui Ho hui*," they emerge in single file from the *Eúmbó* and for a month they are free of the whole tribal domain. They are known as *Oihanangólo*, and all men and boys, even the chieftain himself, must avoid their company and flee before them under penalty of hard knocks from their sticks. When they return to their homes they bathe and are anointed afresh. They are now regarded as marriageable, but the *Efundúla* is an indispensable preliminary.

Passarge<sup>2</sup> was able to observe a very archaic form of ritual as an eye-witness



among the Aikwe (the Naron).\* This ceremony was a pantomime representing the eland buck and his herd of eland does. The pantomime was performed for the benefit of the young neophyte who reclined at the feet of the clapping, singing and clashing crowd of elderly women who formed the orchestra. The younger married women advanced rhythmically stamping in single file, exposing themselves behind by lifting their scanty aprons and executing coquettish and provocative movements of their buttocks. They represent the eland does. Then a man approaches with rhythmic gait and gestures, wearing a stripe of goat's skin round his brow and two carved wooden horns a finger in length, instead of the true eland horns.

The gestures of the ensuing pantomime are of the most drastic realism. It is an unmistakable representation of the mating of the antelopes. The pantomime concludes with general laughter and merriment, only to recommence presently.

A few further facts illustrating the association of puberal and marital rites may conclude this chapter.

In ancient Mexico the girl at puberty was given many wise counsels by her father, and then taught in a temple where she was secluded till marriage.

The Nayar girl announces her first menstrual period to her unofficial mother-in-law through a message by her own mother. The boy is informed, and pours a jug of water over her head (Jagor <sup>4</sup>).

Kropf tells us that the Ama-Xosa have a really domestic and helpful ceremony. Two or three days after the initiation all the neophyte's girl friends fetch firewood from the bush and bring it to her mother's house.

\* [*Cf.* Bleek.]



## CHAPTER VI

### POPULAR SUPERSTITIONS AND MENSTRUATION

THIS chapter will treat of certain beliefs and customs of the more ancient civilisations as distinct from those of savages.

#### 1. THE IDEA OF MENSTRUAL "UNCLEANNESS" IN ANCIENT CIVILISATIONS AND THEIR MODERN SUCCESSORS

According to Hippocrates, the catamenia was essentially a *cleansing* process or catharsis, which occurred more easily in those women who had born children than in others. In Christian Greece to-day there is a regular menstrual tabu. According to Damian Georg, women at the period may neither take communion nor kiss the sacred pictures. Jewish women\* are forbidden to work in their kitchens, sit at meals with others, or drink water from a glass which another person may use during the period. This is in the Mosaic tradition, and the code as first given to Israel, or evolved into definite form, was very stringent. The time of seclusion and tabu lasted for a fortnight. Any contact with their husband during this time

made him too "unclean" or *tame*, and the punishment for actual coitus during menstruation was death for both partners.

The Talmudists decreed that there must be careful ablutions after menstruation and then a plunge bath. They permitted lakes, rivers or springs to be used for that purpose, but favoured a bath or receptacle which had a certain definite cubic content (40 Sen). But the water had either to be "natural," *i.e.*, lake or river or else rain water (see Baumberg, 98, etc.).

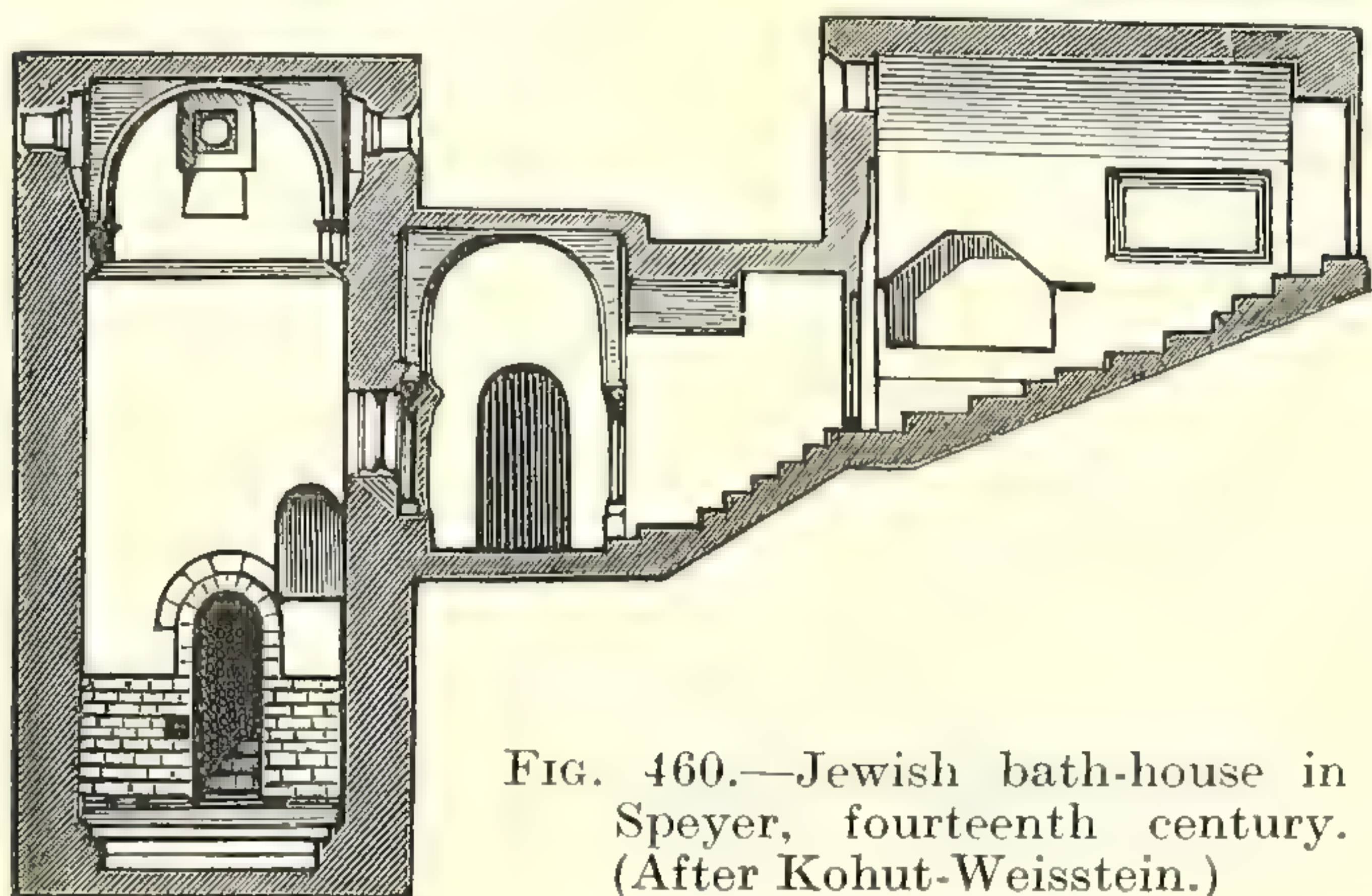


FIG. 460.—Jewish bath-house in Speyer, fourteenth century. (After Kohut-Weissstein.)

During her time of seclusion the Hebrew woman wore a distinctive dress, according to A. Weill.

"The ablutions and plunge bath were taken in the presence of two women specially selected and generally paid for this office and attendance by the community. Whether in summer or winter, the woman had to immerse herself completely three times. Even the smallest Jewish colony or community had its special *mikveh*, which was arranged so that the water could be warmed. The cost was often borne by rich members of the community. After bathing and dressing in her usual attire, the woman was recognised by her husband as 'clean.'"

\* For Jewish regulations see the Niddah.



In the Middle Ages some of the wealthier Hebrew communities founded and fitted very comfortable and extensive bath-houses in the neighbourhood of their synagogues. Some of these bath-houses survive to this day and their structural plan is admirably bold and apt. There is a specimen at Speyer on the Rhine, dating from the fourteenth century (see Fig. 460). The bath itself is square and roomy, and is reached by a staircase. Halfway down there is a small room like



FIG. 461.—Entrance court leading to the Jewish bath-house in Friedberg.

a cupboard which may have been for undressing and dressing, and a bench is let in the wall of the staircase for those waiting their turn. Fig. 460 shows a section of this building after the drawing by the Government architect, Weisstein, reproduced by Kohut.

There is another striking piece of architecture in the old Hessian town, Friedberg in the Wetterau. Dieffenbach<sup>6</sup> is not of the opinion that it can be of later date than the thirteenth century, for it has been mentioned as in use in documents of the succeeding century (1350). It is built on the steep slope of a hill; the area is



20 ft. square, and it is very deep (90 ft.) in comparison. The outer entrance is by a low, little noticeable door leading to a narrow courtyard and a flight of seventy-seven steps. The lowest steps are under water, and the stairs do not descend all at once but in a series of landings and right angles under low arches with columns whose capitals have floral ornaments (Fig. 462). The whole edifice is surmounted by a shallow cupola with a large round skylight, admitting light and air. Here

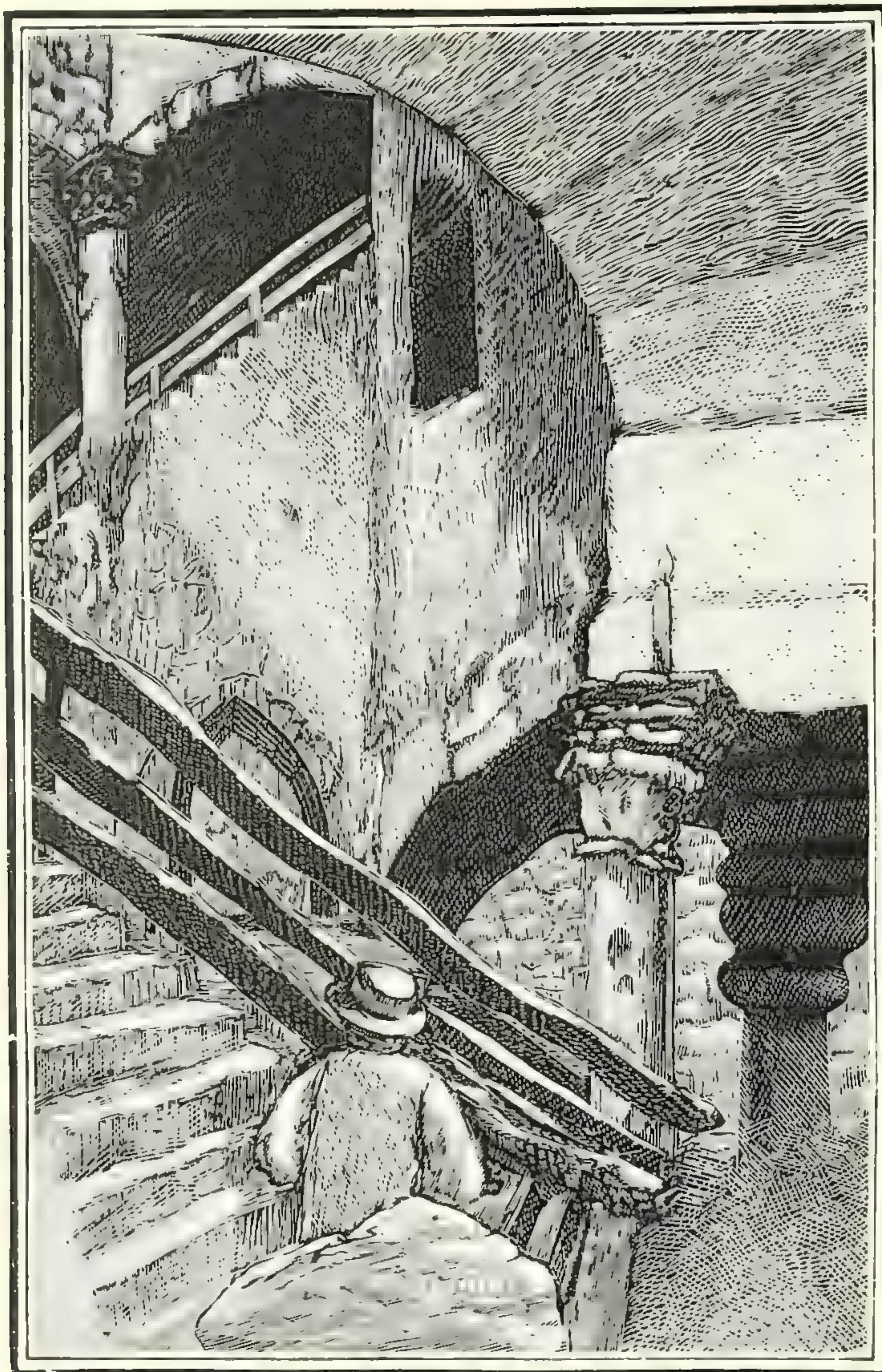


FIG. 462.—The subterranean steps of the Jewish bath-house in Friedberg.

also, and at the top of the stairs, is a small niche-like space which appears to have been a very primitive dressing-room.

No arrangement for the inflow or outflow of water is apparent in this bath-house. The water remained at the same level. Similarly, the temperature also remained even at only about 45° F. In 1829 Dieffenbach<sup>6</sup> records that further bathing there was forbidden by the Government because of dangers to health, and this prohibition is still valid.

The oldest of the ritual women's bath-houses of the Hebrew community in



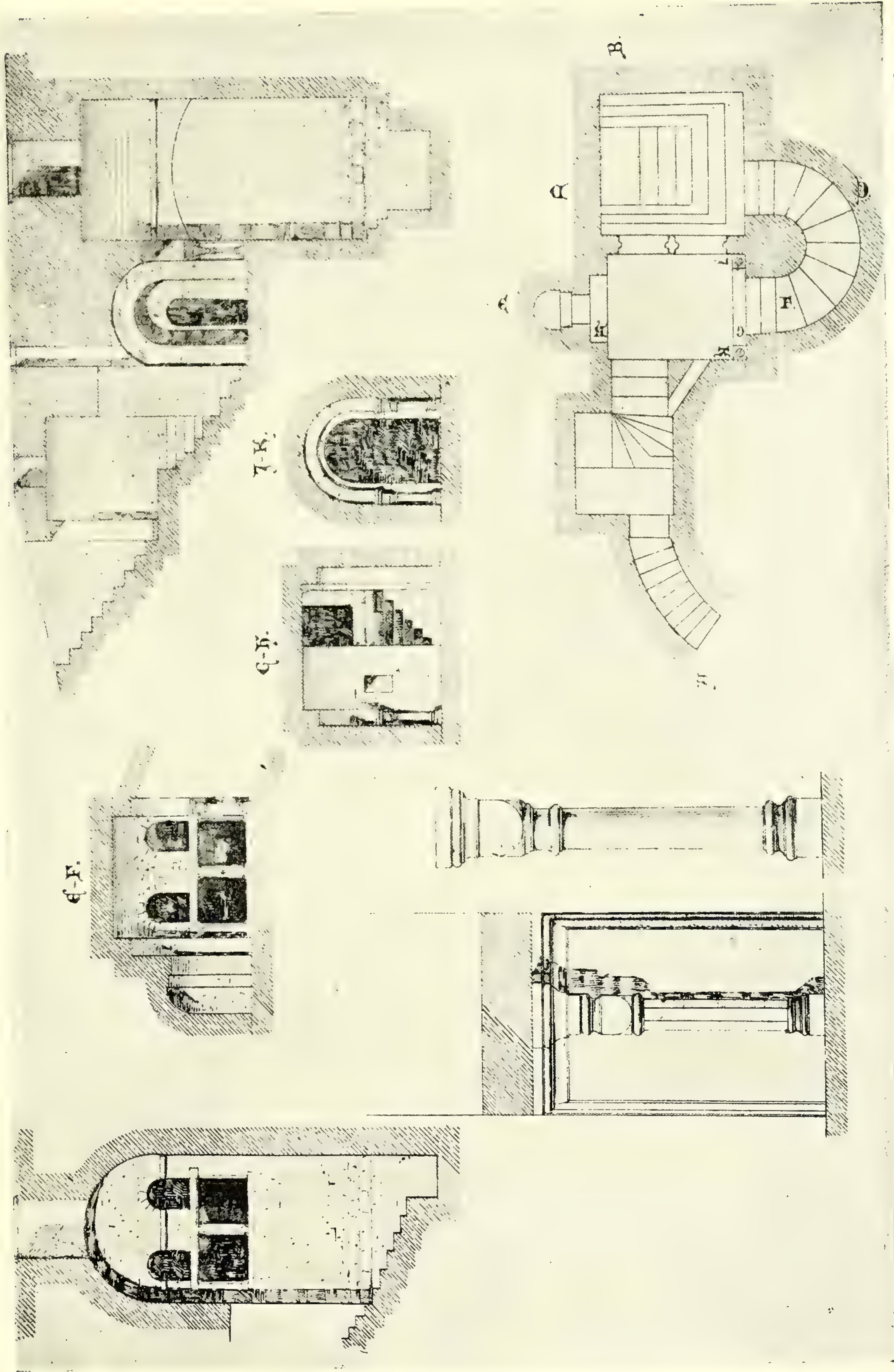


FIG. 463.—Ground plan of the Jewish bath at Worms. (From an official unpublished sketch, by permission of the authorities of the Paulus Museum.)



Germany is the Byzantine structure at Worms.\* It is little known, but was restored in 1895. S. Rothschild, the authority on Hebrew antiquities, quoted by M. Bartels, believed it to date from the eleventh century, like the adjacent synagogue.

This interesting building is depicted in ground plan (lower right-hand corner), vertical section (upper right-hand corner) and certain architectural details in Fig. 463.

We owe permission to reproduce these details to Mr. Rothschild and to the kindness of Messrs. Koehl and Weckerling.

About 10 m. beneath ground level the water is still to be observed to-day, the temperature being from about 50° F. An archway leads down forty-one steps to the well (see ground plan, A—B; at A is the entrance through the archway, at B the bathing room proper). After twenty steps we arrive at a room about 4 m. long by 3 m. wide, which served as an anteroom (G H I K of the ground plan). In the wall are four openings for windows, two over two (see E F). In the adjoining wall there is a small niche or opening (E) the purpose of which is uncertain. To reach the main bathing room from the outer chamber we have to mount a winding staircase (F) around a thick column and then fourteen steps down to the original water-level, from which seven more steps lead to the bottom of the bath. This room is somewhat chilly; the rough walls curve upwards towards a big opening about 1 m. in size, which originally was the only source of light (see C D). Brickwork of red sandstone surrounds the bathing-place on three sides, giving the impression of a natural formation hewn out of the rock.

The majority of the Hebrew communities, however, were far less amply provided with space and facilities for these ritual baths, and the results, in the baths provided in cellars by the synagogues or private houses, were highly insanitary and repulsive (Metzger, Trusen and Wunderbar (*cf.* also Picard) pointed out the resultant dangers to public health). Jungendres has described the simple bathing arrangements which were customary among the Jews in Fürth, near Nuremberg, at the beginning of the eighteenth century. Fig. 464 shows a bathing arrangement consisting of a simple wooden tub. Fig. 465 shows a kind of sunken bathing-place, although of the smallest proportions. It was, incidentally, a ritual obligation that each individual woman should have at least two women witnesses that her immersion had been complete and not a hair of her head remained dry.

The belief in the perilous and "unclean" properties of menstruating women was held firmly by the Iranians, 5000 years ago, and is perpetuated in the teaching of Zoroaster. The Medes, Persians and Bactrians had rigid rules in this respect which had to be observed for a minimum of three days and sometimes for as many as nine. The Avesta expressly forbids coitus during menstruation. The penalties were severe and fell on the man as well as the consenting woman. The woman as well as the man was scourged or fined both for a first or second offence; and the man's crime, in case of such intercourse outside marriage, was, according to Zoroaster, inexpiable and incurred the pangs of hell till the general resurrection of the dead (see Alt).

The duration of the seclusion is even longer under Zoroaster's Code than in the Mosaic Law. Zoroaster prescribed nine days' abstention in addition to five further nights, if, and when the menses lasted over four days. Moses cut this down to seven. The Indian Parsis still follow Zoroaster's teaching, in theory (Du Perron), but in practice they are more moderate and merciful. The incarceration of menstruating women in dark *Dachtansatan* rooms, in silence and with insufficient food, is still the law of their faith.

\* [The one at Andernach has also been claimed to be the oldest.]



In ancient India the existence of women during menstruation was one series of deprivations, degradations and prohibitions, some of the most fantastic character. Should any of these be infringed, the woman's children and descendants were believed to be in danger or afflicted in some way (Schmidt<sup>8</sup>). The ancient Hindus had one relevant belief which seems to have been peculiar to themselves, among all races or religions, ancient or modern. They believed that the sight or conversation of one menstruating woman implied ceremonial defilement to another in the same condition and must be expiated by further fasting, even among kinswomen and members of the same Brahmin caste (see Schmidt<sup>8</sup>).

Mohammed expressly forbade coitus in marriage until the woman had gone through her ritual purification. So, all Islam, to this day, regards menstruation as unclean, *e.g.*, Arabia, Egypt and among many peoples throughout Africa from East to West. In some respects this stringent tabu favours personal hygiene. Thus, in Persia and Turkey women are expected to wash all over at such times thrice in twenty-four hours and to abstain from religious exercises.

We may include here some remarks concerning similar observances in the Far East. Wernich has collected information about Japan and we have also some from China on the subject.

In certain Japanese provinces, especially in Hida, women may not visit temples or pray to the gods or invoke the good spirits during menstruation. In other districts they are secluded in their apartments, and may not share the meals of the household.

Nevertheless, the concept of menstruation as a purification from spiritual or physical evil does not appear in the copious Japanese vocabulary on the subject, though terms indicating repulsion are frequent. In the provinces most accessible to foreign observation the special rules for women at such times seem rather general, vague and not sharply enforced. They are forbidden to work hard, to bathe or to have sexual intercourse, and they must avoid chills, which are aptly termed *Shimokase*—"wind blowing from below"; but they may divert their minds by visiting the theatres.

The ladies of Japan, in all classes, practise a form of personal hygiene at such times which is thus performed. They always carry a large store of thin paper about with them for various purposes. This paper is rolled, pinched and kneaded into balls of the size of a walnut or large almond, and these are inserted into the



FIG. 464.—Washing tub used by Jewesses in Fürth for ritual purification after menstruation. Eighteenth century. (After Jungendres.)



vagina, especially before visiting the theatre. When she feels that the absorbent paper has become saturated, she retires and inserts another. These paper tampons are also used in cases of profuse leucorrhœa, according to Wernich. The average number used during the day is from eight to twelve. A brief but profuse hæmorrhage at such times is considered normal and healthy, other peculiarities are disregarded. In order to keep the paper tampons in place, the women wear a well-made T bandage known colloquially as *kama* "the pony" or "the little horse." A thorough bath

after the period is usually taken. The little Japanese girls have few psychical shocks at puberty, for all these precautions are freely mentioned and discussed by older girls in their presence.

The Chinese menstrual toilette is, in many parts of the country, on the same lines.

## 2. MENSTRUAL BLOOD AS A MEDICAMENT

We have often mentioned the primitive conviction of the extremely noxious and dangerous nature of menstrual blood. To the primitive mind there was only one step between this conviction and the attempt to use menstrual blood homœopathically as an antidote to the bad magic of disease. Moreover, this trend of thought was not confined to the peasantry and the uneducated classes, but received support from physicians of experience and repute. Thus, Pliny reports that applications of menstrual blood were considered curative of podagra (gout), goitre, sore throat, erysipelas, boils, puerperal fever, the bites of mad dogs, epilepsy and even mere headaches.

A special—or sometimes a sole—efficacy was attributed to the first menstruation in this respect. Garments stained with this fluid were soaked in



FIG. 465.—Sunken bathing place used by Jewesses in Fürth for ritual purification after menstruation. Eighteenth century. (After Jungendres.)

Rhine wine or vinegar, according to Welsch, and the result used as a medicament and considered useful against epilepsy. Others thought it efficacious as an emmenagogue or in curing stone; others again, mixed with bread and theriac against tertian fever.

A. von Henrici's collection of traditional Russian folk medicine has examples from Novaya Uschytza and Ryshanovka especially against warts and birthmarks. The blood mixed with water was to be drunk, or stained clothes laid on the affected parts. According to Schurig it was used in veterinary work and for a variety of ills by external application.



Saint Hildegarde (*fl.* 1150) recommended ample baths of menstrual blood as an infallible preventive of leprosy. The Styrian peasants, according to Fossel, still believe in it as curing warts and averting gout. Among the Saxons and Rumanians of Transylvania it is used by external application (*v.* Wlislöcki<sup>5</sup>). Also, among the gipsies, it is mixed with bath water of feeble and puny babies, together with chopped straw and hay. The waste water is then poured over a white dog and this spell is uttered :

“ That which is good shall return !  
That which is ill shall go hence ! ”  
(H. v. Wlislöcki.)

According to Bastanzi, the belief in this specific as a cure for warts and lumbago is active in Belluno and Treviso.

In Bavarian Franconia, according to Lammert, there are some strange instances of the belief in sympathetic magic in this connection. A woman who is nervous about a delayed period is recommended to wear a chemise saturated with fresh menstrual blood, or even to drink some of it mixed with water. But it must be the blood of a virgin at her first menstruation.

An old Indian writer, quoted by Schmidt,<sup>8</sup> says that if an ill man is to be bathed then bathe a healthy one ten times and touch a menstruating woman. Then will the sick man be well.

These and similar superstitions are as much magical as medicinal. We may consider them in somewhat more detail.

### 3. MENSTRUAL BLOOD IN PRIMITIVE MAGIC

In *amulets and magic spells*, as well as a medicament, this substance has played an important part. Here, too, the preference is given to the virginal *primum menstruum*, but other kinds have also much good to their credit.

Saint Hildegarde quoted an ancient superstition to the effect that a blood-soaked garment cast into the flames would extinguish the most vehement fire ; and worn next the skin, it made a man invulnerable to thrust and blow of an enemy's steel. In Swabia to-day this superstition survives in the forging of weapons of war.

In Pliny's time, menstruating women could disperse storms and hail, and their presence on board saved many a ship in peril. Insects fell from trees if a naked menstruating woman approached. Metrodorus of Scepsis, whom Pliny quotes (*Nat. Hist.*, XXVIII., 7), has described the Cappadocian custom whereby women at the period walked at night naked below the waist or with unbound tresses, bare feet and girdles unloosed through the fields to destroy insect pests. But Pliny warns us that after sunrise this method lost all its efficacy, for even young vines and climbing plants such as ivy withered at the touch of the menstuous woman.

Rochholz states that in parts of Germany menstrual blood, a Maundy Thursday egg, and the sacrifice of a black hen, decapitated and buried under the threshold, is a specific against the danger of fire. Daniel Beckher speaks of the efficacy of the same sovereign remedy in attracting hares and rabbits so that they might be slain by myriads or caught with the hands. All that had to be done was to fasten a cloth stained with the blood of a first menstruation to a stick and carry it. In ancient India it was an ingredient in magic potions promoting virile force and length of life (Schmidt<sup>8</sup>). The Kausika Sūtra was emphatic on this point, but it must be the blood of the first menstruation.



Pilsudski records a similar belief concerning menstrual blood among the Ainu of Sakhalin, although apparently not limited to that shed on the first occasion. It was also a talisman and the stained rags were worn as amulets or applied externally.

Eckarth, whom we have frequently cited already, is emphatic about the efficacy of this remedy. The ancient Goths, Finns and Lapps used it on their venturous sea voyages, smearing sails and ropes therewith. Young maidens were safe from harm if they wore a shred of their own stained linen and a morsel of fern root in a little bag round their necks. It brought to the lusty and to the worldly luck in games of hazard and victory in battle ; to the sick, healing, both among men and cattle, and especially in cases of mange or itch. But Eckarth utters a warning against cheating and worthless substitutes in this matter and also against the peril of magic through "magnetism."

We have already referred to Wlislöcki's evidence of the menstrual and sexual superstitions of the Balkans and Eastern Europe, both among the gipsies and the European peasantry. We shall have occasion to mention some of these curious beliefs and practices when treating of *love charms*. The gipsies, in particular, believe in the efficacy of menstrual blood against sterility.

H. v. Wlislöcki states that women who wish for children and who have already tried other measures without result present a sacrifice to the moon. On a hill at full moon they bury the genital organs of two birds and two four-footed animals, both male and female, and then they let their menstrual blood drop over the spot. Among the gipsies of North Hungary the genital organs of childless couples are rubbed with a salve before intercourse. This preparation is made of the menstrual blood of a virgin, placental blood, the urine of an unbaptised boy and some pumpkin seeds. This remedy is also often employed by the Slovak peasant women.

Just as in other things we find opposite qualities credited to the same object, so here menstrual blood can take away but also strengthen male potency. This was well known in ancient India, and Schmidt <sup>9</sup> quotes several writings illustrating this feature of popular belief.

The gipsies of Transylvania, states von Wlislöcki,<sup>4</sup> practise a primitive kind of organotherapy, bathing the male organ before coitus in asses' milk and menstrual blood, or drinking the powdered testicles of a fox and menstrual blood, mixed with food. The full moon appears repeatedly as a necessary accessory in these rites.

We find menstrual blood used in the smithy among these gipsies, even if the art of the forge is concerned no longer with swords but with patching cauldrons and horse shoes. Among the Christian peasantry it is firmly believed that the Jewish tavern keepers of the Transylvanian villages make use of the same substance to adulterate their brandy, and produce an incessant and continuous thirst.

Pliny had empirically observed that women who do not ever menstruate are sterile, since he identified the menstrual flow with female semen.

The New Zealand Maoris, according to Tregear, believed "that the menses contained the germs of unformed infants" and that evil spirits might arise therefrom and re-incarnate in the womb.

Goldie confirms this view among the Maoris with more graphic detail. A veteran native told him that "Paheke" (the menses) is a sort of human being, for when it ceases to appear something grows in the woman, taking human form and becoming a child.



## 4. MYTHS OF THE ORIGIN OF MENSTRUATION

Many of these beliefs are very peculiar and interwoven with ideas of gods, ghosts and demons.

The ancient Hindu belief (as recorded by Schmidt <sup>8</sup>) is curious, far-fetched, and involves guilt and expiation for the death of the demi-god Višvarūpa slain by Indra's thunderbolt.

Among the Iranians, where menstruation was regarded with peculiar horror as thought to be due to evil spirits, the legend ran that Jahī, the female spirit of lust and voluptuous pleasure, was the first being to be afflicted with menstruation by Angra Mainyu (Ahriman).

It has been suggested by Max Bartels that this may not be without significance, since it is possible that early sexual activity might have induced in some cases premature menstruation.

Among the Omaha menstruation is ascribed to Wakonda. In the struggle between the rabbit and the black bear, Mactciñge, the rabbit threw the bear's mutilated member at his grandmother, wounded her and originated the catamenial function.

Archibald Hunt states that the Murray Islanders of Torres Straits believe menstruation to be due to the amorous attacks of the Moon, a youth who periodically possesses all women. If menstruation is delayed, native herbal remedies correct the mishap.

Seligman has quoted the Sinaugolo myth (from the Rigo area of New Guinea) which also introduces the moon as the originator of menstruation, and perhaps his version was the original of the story as told on Murray Island. The moon lived on earth as a tiny youth covered with silvery hair, cohabited with a woman, was slain by her husband and has punished woman ever since. The Tuhoe Maoris have, states Goldie, another version of the same basic motif.

A Maori term for the period is "paheke," which means ancestral spirit, deity or mystery. It is believed that no woman can menstruate at the new moon, but some are able to do so when it wanes, some at full and some after the first quarter or turn. The women call the moon "husband of all women on earth." An aged woman saw that "paheke" never happened on dark moonless nights or during even prolonged lactation. Again, an aged native man said "The moon is always the real husband of women, 'paheke' appears as the moon shines. The union between spouses is nothing, the real husband of women is the moon" (see Goldie).

The Berlin Ethnographical Museum possesses a fantastic specimen of the wood carver's art from New Britain. It shows the concept of menstruation as the work of supernatural or external entities and was brought to Europe by the "*Gazelle*" (Fig. 466).

A grotesque female form is depicted; she has a wide, sharply outlined, open

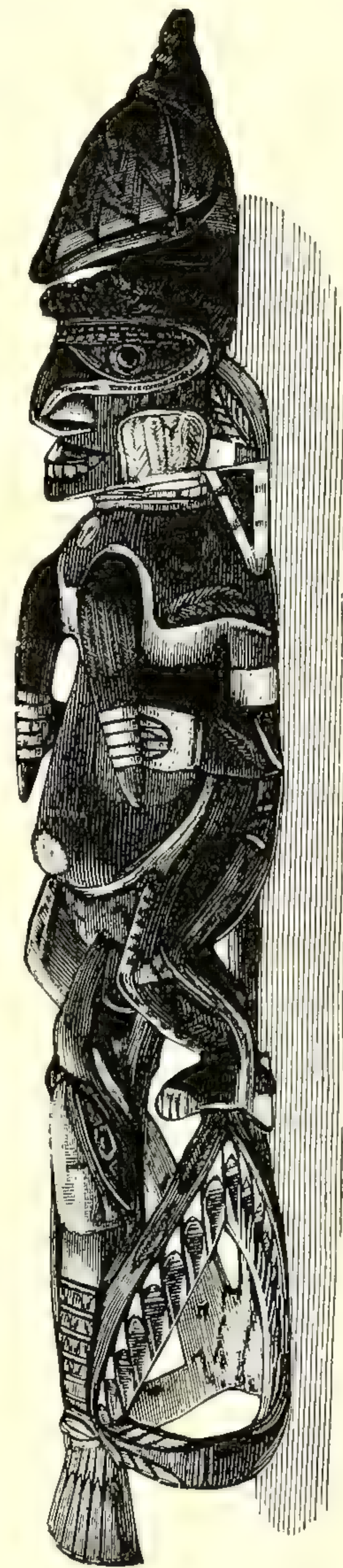


FIG. 466.—Carved wooden female figure from New Britain, showing a bird drawing something out of the genitals. Mus. f. Völkerk., Berlin. (Photo, M. Bartels.)



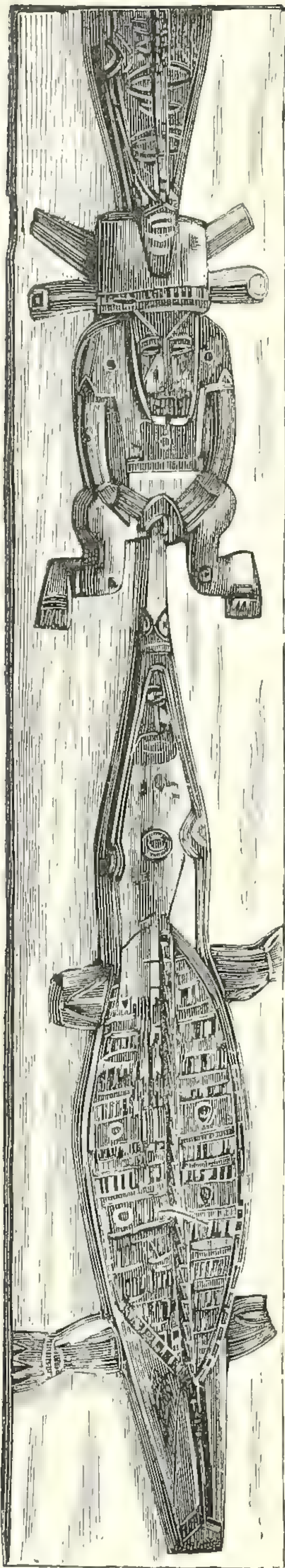


FIG. 467. — Carved wooden female figure on a plank from a hut for menstrual seclusion from Suam, Finch Harbour, New Guinea. Mus. f. Völkerk., Berlin. (Photo, M. Bartels.)

mouth, wide nostrils, aquiline nose and relatively enormous eye sockets. Her woolly hair is crowned with a head-dress reminiscent of a snail shell in form, and tipped with a spiral knob. Her enormous ears reach from the outer corner of the eyelid to the lower angle of the lower jaw; the triangular lobes touch her shoulders and have triangular perforations.

The figure is recumbent. The arms are flexed at right angles at the elbows and the hands grasp the tips of the long, narrow, conical breasts that hang from the ribs to the level of the line dividing the mesogastric and epigastric regions. The abdomen projects; the umbilicus is large and concave. The lower limbs are slightly bent, both at hips and knees, exposing the vulva, from which there projects a reddish object, resembling a segment of orange pulp. A bird with an enormous, slightly curved beak seizes this object as though to drag it forth from the vagina; the bird's wings are half furred and support the woman's feet. The shape of the bird's head and beak leave no doubt that it is meant to represent the hornbill, which is the hero of many local myths and legends, *i.e.*, this totem-bird is producing or provoking menstruation. The carving is of rather light weight, a metre in length and painted in bright red, black and white.

In Australia, on the Pennefather River, a curlew takes the part of the hornbill and "draws forth" the menses for his father the storm bird (Roth<sup>5</sup>).

The New Guinea Development Company has given certain long planks of wood, decorated with carving, to the Ethnographical Museum of Berlin. They had been used in the village of Suam near Finch Harbour (New Guinea) to decorate a building in which, according to the district superintendent Mentzel, young girls between 8 and 12 years of age were sequestered. It is probably one of the menstrual

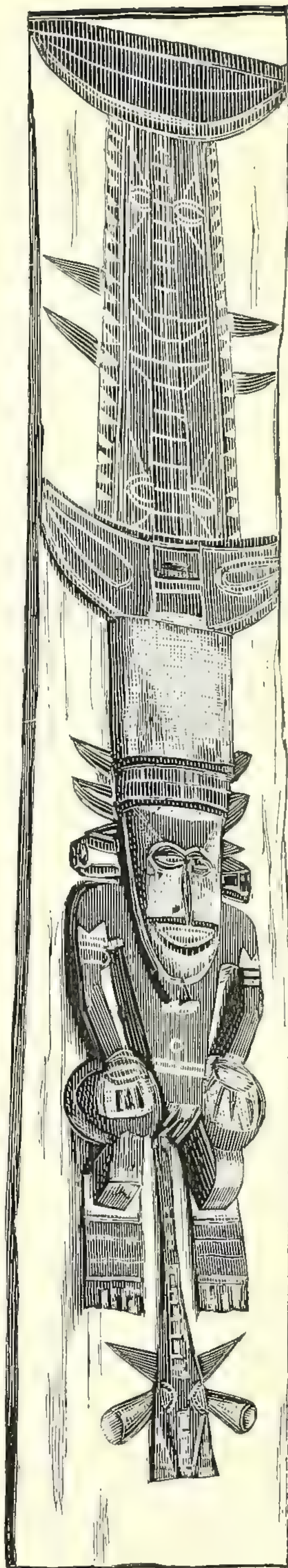


FIG. 468. — Carved wooden female figure on a plank from a hut for menstrual seclusion from Suam, Finch Harbour, New Guinea. Mus. f. Völkerk., Berlin. (Photo, M. Bartels.)



dwellings so frequently mentioned in our study. The planks in question are several yards long and apparently depicted a continuous pattern of figures.

To the left, on one plank (VI., 10,521), we see a large crocodile, carved in much detail, the tail having been seized by a large flat fish, which grips it firmly. The crocodile, in his turn, seizes in his mouth the top of a tall, rectangular head-dress, or hat, from which four feather ornaments project sideways, worn by a disproportionately small grotesque female form (Fig. 467). Her face is long, her chin descends almost to the pit of her stomach, and her shoulders are on a level with her temples. Her nipples are indicated by little round holes on either shoulder, her navel by a slightly bigger circular hole. Her hands are placed between her thighs as though to drag open the rima pudendi; her short legs are straddling, and her vulva is widely opened. A second crocodile of equal dimensions to the first approaches her

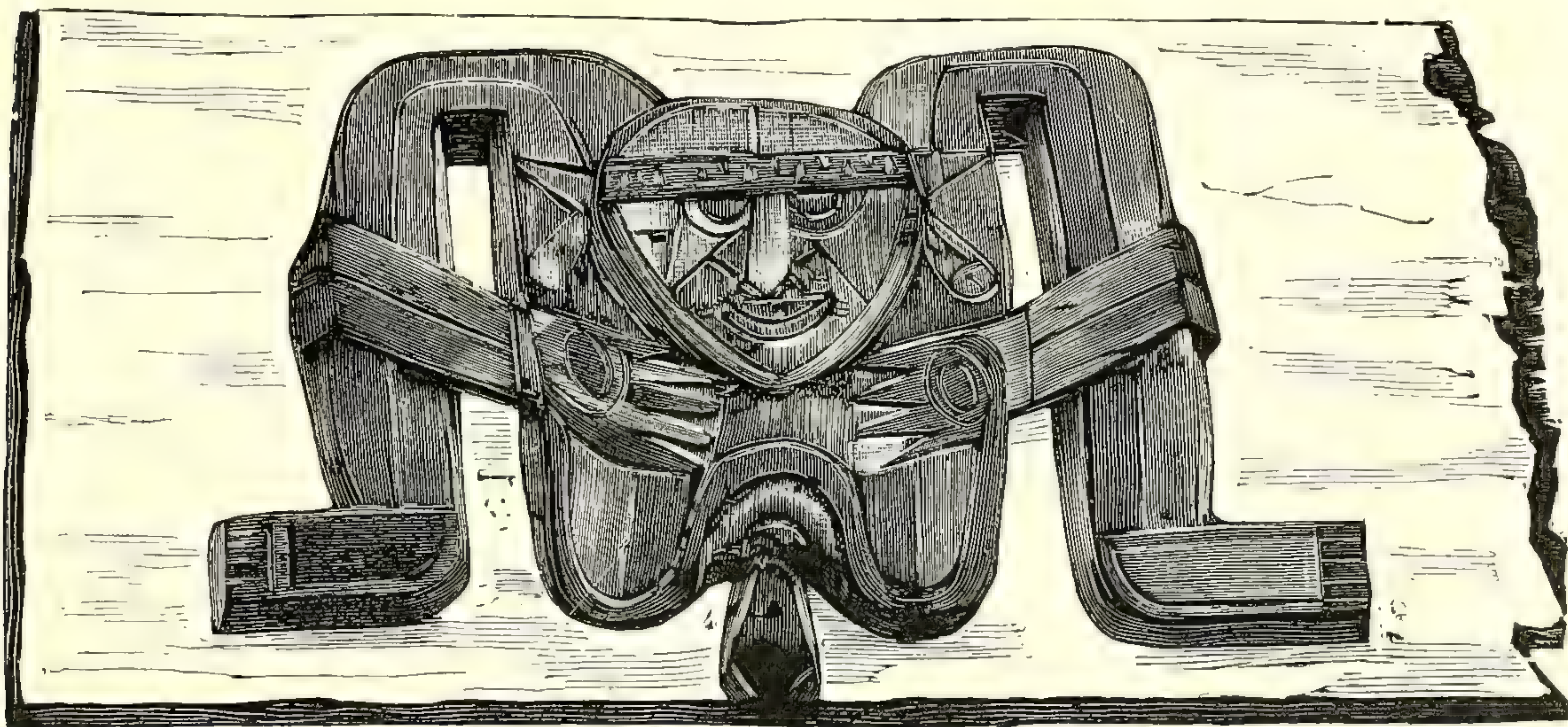


FIG. 469.—Carved wooden female figure from Suam, New Guinea. Mus. f. Völkerk., Berlin. (Photo, M. Bartels.)

from in front and thrusts its long narrow snout into her vulva. All the figures are coloured red, black and white.

Plank VI., 10,523, *a* and *b*, bears a grotesque human form, carved in high relief, with a square head-dress and four short plumes set sideways. The upper rim of this head-dress merges into a very flat but lengthy appendage reaching towards the end of the plank, and resembling a large flat fish with a tail wider than its body. The woman's figure has flexed knees, straddling thighs, and genitals exposed. The hands are placed as before. From the posterior commissure of the vulva there creeps an animal with a small cylindrical body like a snake's and a very large wedge-shaped head. Head and body are furnished with flat lateral flippers, like feathers or fishes' fins (Fig. 468).

These figures are carved along the horizontal planks, but in the centre and at right angles, we find another female form with legs disproportionately long and not only sharply flexed at both hips and knees, but turned completely outwards, so that the soles of the feet are in line with the buttocks and the head is between the knees. The vulva is gaping and out of it comes a reddish object, rhomboid in outline (Fig. 469).

The obverse of the plank repeats the horizontal carvings of 10,523.

Plank VI., 10,522, has to the left a great flat fish (such as rose from the head-



dress in 10,523) standing in the concavity of a great lunar crescent. On the convexity of the crescent hang two human heads side by side. The middle of the plank shows a small figure in high relief, with broad skull and long face and feathered head-dress, *not* a hat. It has no actual body, the legs fork directly under the head, and there are no genital organs. But a small round serpentine creature emerges between the forking legs; it has a flat narrow head. This must be taken to represent a serpent and not a *membrum virile* as there is no indication of the scrotum. The right half of this plank repeats the design of VI., 10,523, exactly, except that the "snakes" have shark-like fins.

Oars of native workmanship from New Guinea sometimes represent similar designs. The blade of the oar is set into the rowlocks which represent crude female figures from 12 to 18 cm. in height, with straddling lower limbs and patent genitals. The hands are rested on the thighs and a snake crawls forth between them, along the oar blades. In one case of an oar from Huon Bay the serpent enters the woman's body. There are specimens in Berlin and in Munich.

In an account of Sokotri texts J. H. Müller has printed a story of the origin of menstruation according to a native narrative. "In the olden time there was a man and a woman. The woman had no menstrual flow, but the man had blood in his arm-pit. These two were married and the man had always the blood. Every morning he scraped off the blood with a knife, put it into a pot and hid it from his wife. One day his wife saw him at the place where he was hiding it and she waited till he went away. When he had gone his wife went to the pot, took it away, unfastened the lid and took it off. She dipped her finger inside and then drew it out, and thinking the blood was honey she licked her finger, but when she tasted the blood she spat it out on the ground. She looked at her finger and still saw some blood on it. So she went and washed her finger, but could not get it off. Then she took water and heated it over the fire and washed her finger in that, but she could not wash the blood off. So she came to her husband and said, 'What have you done with that pot there?' And he replied, 'What I have there is blood!' Then she said, 'What will get it off my finger?' He replied, 'Go to the Sage, he will get it off.'

"Then the woman went to the Sage and said to him, 'I have touched my husband's blood which he scrapes off from his arm-pit, and I have tried to wash it off, but it won't come off.' Then the Sage said to her, 'Go, and when you get home put your finger into your vulva and then suck it.' And she did so, and the blood came off her finger and entered into the woman and from that day it flows from every woman once every month."

## 5. MISCELLANEOUS MENSTRUAL SUPERSTITIONS

We will here enumerate a few further primitive beliefs and customs in this sphere.

According to Schmidt,<sup>9</sup> the Hindus used to believe that strong sunlight could fertilise menstruating girls. So sterile wives were placed naked in the sun for the purpose of obtaining the gift of impregnation.

A prolonged menstrual period (over nine days) was attributed in Iran to evil spirits and treated with 400 strokes, and all kinds of purifications with water and cow's urine were undertaken. Ants and other insects had to be slain in sacrifice as well.

The Hindus had to give their daughters in marriage before their first menstrual period, one of the texts states.



The gipsies of Eastern Europe believed, states H. von Wlislöcki, that in every district and province the local witches met on Friday Eve on a "moon hill" or "moon mountain" and held their Sabbath. They renewed their pact with Satan by collecting their menses throughout seven years and offering it to him as a loving cup. The reddish stones sometimes found on these mountains were dyed scarlet by spilt blood.

The prohibitions about food and diet generally at the first period and sometimes on subsequent occasions have been mentioned by F. de Azara among the Maya and Rengger among the Payagua. The Maya matrons may never eat the flesh of oxen or cows and their diet during menstruation is wholly vegetarian. If they ate fat at such times they would expect to grow horns out of their foreheads.

A further belief is of interest, for it is found among peoples widely separated in space and distance. According to Rey, there is a belief that menstruating women are bitten by lizards among the Portuguese, and they wear trousers or knickers at such times for protection. A very similar fear prevails among the Macusi Indians of British Guiana, according to Schomburgk, but refers not to lizards but snakes. Women and girls avoid the snake-haunted forest thickets at these times. This belief is obviously very primitive and deep-rooted and allied to that expressed in the Papuan wood carvings. Only the dangerous, magic species varies; lizard in Portugal, snake on the southern coast of the Caribbean Sea, crocodile in New Guinea, hornbill in New Britain.

The bite, moreover, of the sacred animal is not so much an attack as an erotic and ecstatic caress. Both serpent and crocodile appear in the Papuan carvings. Among the African Basuto, nubile girls dance round clay figures of snakes, and in the eighteenth century in Germany folk believed that a hair of a menstruating woman's head could turn to a snake if buried in a manure heap.

Ehmann mentions a Japanese superstition that "women should beware of serpents lest they become *mi-komereru*—a play on words, as *mi-komereru* may mean, according to its accentuation, either coitus or intrusion into the woman's body."

In Uganda, states Roscoe, the new moon or the moon on the wane is associated with menstruation. A woman who does not menstruate is thought to be fatal to her husband, unless he scratches her with his spear so that the abrasions bleed. Thus he ensures his safe return from battle.



















